CORRECTIVE ACTION STABILIZATION QUESTIONNAIRE

Completed by: Mary Wojciechowski
Date: June 16, 1992

Background Facility Information

Facility Name: Ball Corporation
EPA Identification No.: IND 000 810 713
Location (City, State): Muncie, Indiana
Facility Priority Rank: Moderate

1. Is this checklist being completed for one solid waste management unit (SWMU), several SWMUs, or the entire facility? Explain.

7 SWMUs
1 AOC

Status of Corrective Action Activities at the Facility

2. What is the current status of HSWA corrective action activities at the facility?

( ) No corrective action activities initiated (Go to 5)
(X) RCRA Facility Assessment (RFA) or equivalent completed
( ) RCRA Facility Investigation (RFI) underway
( ) RFI completed
( ) Corrective Measures Study (CMS) completed
( ) Corrective Measures Implementation (CMI) begun or completed
( ) Interim Measures begun or completed

3. If corrective action activities have been initiated, are they being carried out under a permit or an enforcement order?

( ) Operating permit
( ) Post-closure permit
(X) Enforcement order
( ) Other (Explain)

Corrective action is being carried out under an Agreed Order issued by IDEM

4. Have interim measures, if required or completed [see Question 2], been successful in preventing the further spread of contamination at the facility?

( ) Yes
( ) No
(X) Uncertain; still underway
( ) Not required

Additional explanatory notes:

The above order calls for remediation in one area of the facility. The remediation includes sampling to determine the nature and extent of contamination. There is one other area not addressed in the order that may also need remediation. However sampling to determine the nature and extent of contamination has to be conducted.

Facility Releases and Exposure Concerns

5. To what media have contaminant releases from the facility occurred or been suspected of occurring?

(X) Ground water
( ) Surface water
( ) Air
(X) Soils

6. Are contaminant releases migrating off-site?

( ) Yes; Indicate media, contaminant concentrations, and level of certainty.

Groundwater:
Surface water:
Air:
Soils:

( ) No
(X) Uncertain

7a. Are humans currently being exposed to contaminants released from the facility?

( ) Yes (Go to 8a)
( ) No
(X) Uncertain

Additional explanatory notes:

The nature and extent of contamination is now known

7b. Is there a potential for human exposure to the contaminants released from the facility over the next 5 to 10 years?

( ) Yes
( ) No
( ) Uncertain

Additional explanatory notes:

Ground water is not used for drinking but surface water is used for drinking and for recreation

8a. Are environmental receptors currently being exposed to contaminants released from the facility?

( ) Yes (Go to 9)
( ) No
(X) Uncertain

Additional explanatory notes:

The nature and extent of contamination is now known

8b. Is there a potential that environmental receptors could be exposed to the contaminants released from the facility over the next 5 to 10 years?

(X) Yes
( ) No
( ) Uncertain

Additional explanatory notes:

Ground water is not used for drinking but surface water is used for drinking and for recreation

Anticipated Final Corrective Measures

9. If already identified or planned, would final corrective measures be able to be implemented in time to adequately address any existing or short-term threat to human health and the environment?

   (X) Yes
   ( ) No
   ( ) Uncertain

   Additional explanatory notes:

The remediation ordered by the state was supposed to begin in March 1992.

10. Could a stabilization initiative at this facility reduce the present or near-term (e.g., less than two years) risks to human health and the environment?

    (X) Yes
    ( ) No
    ( ) Uncertain

    Additional explanatory notes:

There is one area not covered in the state order that may need stabilization but sampling to determine the nature and extent of contamination needs be

11. If a stabilization activity were not begun, would the threat to human health and the environment significantly increase before final corrective measures could be implemented?

    ( ) Yes
    ( ) No
    (X) Uncertain

    Additional explanatory notes:

Further sampling needs to be conducted to determine nature and extent of contamination.

Technical Ability to Implement Stabilization Activities

12. In what phase does the contaminant exist under ambient site conditions? Check all that apply.

    ( ) Solid
    (X) Light non-aqueous phase liquids (LNAPLs)
    ( ) Dense non-aqueous phase liquids (DNAPLs)
    (X) Dissolved in ground water or surface water
    ( ) Gaseous
    ( ) Other _____

13. Which of the following major chemical groupings are of concern at the facility?

    (X) Volatile organic compounds (VOCs) and/or semi-volatiles
    ( ) Polynuclear aromatics (PAHs)
    ( ) Pesticides
    ( ) Polychlorinated biphenyls (PCBs) and/or dioxins
    ( ) Other organics
    ( ) Inorganics and metals
    ( ) Explosives
    ( ) Other _____

14. Are appropriate stabilization technologies available to prevent the further spread of contamination, based on contaminant characteristics and the facility's environmental setting? [See Attachment A for a listing of potential stabilization technologies.]

(X) Yes; Indicate possible course of action.

Removal of contaminated soil would be an appropriate stabilization for the area not addressed in the state order. However further sampling needs to be conducted.

( ) No; Indicate why stabilization technologies are not appropriate; then go to Question 18.

15. Has the RFI, or another environmental investigation, provided the site characterization and waste release data needed to design and implement a stabilization activity?

( ) Yes
(X) No

If No, can these data be obtained faster than the data needed to implement the final corrective measures?

(X) Yes
( ) No

Timing and Other Procedural Issues Associated with Stabilization

16. Can stabilization activities be implemented more quickly than the final corrective measures?

( ) Yes
( ) No
(X) Uncertain

Additional explanatory notes:

Further sampling needs to be conducted.

17. Can stabilization activities be incorporated into the final corrective measures at some point in the future?

( ) Yes
( ) No
(X) Uncertain

Additional explanatory notes:

Further sampling needs to be conducted.

Conclusion

18. Is this facility an appropriate candidate for stabilization activities?

( ) Yes
( ) No, not feasible
( ) No, not required
(X) Further investigation necessary

Explain final decision, using additional sheets if necessary.

Stabilization may be required in an area where 3,000 gallons of gasoline was released from an UST in 1986. The gasoline was recovered but no further action was taken. Sampling to determine the nature and extent of contamination needs to be conducted before stabilization can be implemented.

Stabilization is not required in a form mineral spirits disposal area because the Indiana Department of Environmental Management (IDEM) issued an Agreed Order to remediate the area. Sampling to determine the nature and extent of contamination will also be covered under this order.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

HRE-8J

April 21, 1993

Mr. Richard Cole
Ball Corporation
1159 South Macedonia Avenue
Muncie, Indiana 47302

Re: Visual Site Inspection
Ball Corporation
Muncie, Indiana
IND 000 810 713

Dear Mr. Cole:

The U.S. Environmental Protection Agency is enclosing a copy of the final Preliminary Assessment/Visual Site Inspection (PA/VSI) report for the referenced facility. The executive summary and conclusions and recommendations sections have been withheld as Enforcement Confidential.

If you have any questions, please call Francene Harris at (312) 886-2884.

Sincerely yours,

Kevin M. Pierard, Chief
Minnesota/Ohio Technical Enforcement Section
RCRA Enforcement Branch

BALL CORPORATION, PAVSI 92-93
IND 000 810 713

- 7 SWMUS 1 AOC
- RFA, IDEM ENFORCEMENT ORDER
- ORDER CALLS FOR REMEDIATION IN ONE AREA, THERE'S ONE OTHER AREA NOT ADDRESSED IN ORDER THAT MAY NEED REMEDIATION
- NATURE & EXTENT NOT KNOWN
- MEDIA : GW & SOILS
- REMEDIATION ORDERED TO START 3/97
- LNAPLs & DISSOLVED IN GW
- VOCs
- PART A PERMIT APP. 1980 FOR 10,000-g CONTAINER STORAGE AREA (SWMU 1 & 2)
- SWMUS 1 & 2 WENT THRU CLOSURE IN 90 & 91. IDEM DETRMND CLOSURE MET REQRMTS
- SOIL, DURING CLOSURE OF SWMU 1 & 2, DETECTED METALS & SVOCs
- 1986 3,000 g GASOLINE RELEASED TO SOIL AROUND AOC 1. GAS PUMPED FROM GROUND UNTIL 1990; NO SOIL EXCAVATION OCCURRED
- EVEN THOUGH CONTAMINATION IN SOIL FOUND DURING CLOSURE OF 1 & 2, IDEM APPROVED, RAI RECOMMENDS ADD. TESTI
- SOIL & GW SHOULD BE ANALYZED AROUND AOC 1
- ORDER SIGNED W/ IDEM FOR SWMU

CONCLUSIONS

SWMU 1 : HIGH POSSIBILITY THAT CONTAMINANT ENTERED GW

RECOMMEND : ADD. SOIL TESTING

SWMU 2: HIGH PROBABILITY THAT CONT. ENTERED GW

RECOMMEND : ADD. SOIL TESTING

SWMU 3: HIGH POTENTIAL WASTES ENTERED GW

RECOMMENDS: FACILITY CONTINUE TO FOLLOW GUIDELINES IN ORDER W/ IDEM ('89)

SWMU 4: POTENTIAL RELEASE LOW

RECOMMENDS: NO FURTHER ACTION

SWMU 5: POT. RELEASE LOW

RECOMMENDS: NO FURTHER ACTION

SWMU 6: POT. REL LOW

RECMDS: NO FURTHER ACTION

SWMU 7: " "

RECMDS: " "

~~SWMU 8~~

AOC 1: HIGH PROBABILITY CONTAM ENTRD GW

RECMDS: SOIL + GW ANALYSIS DEFINE NATURE + EXTENT

U.S. Environmental Protection Agency
Office of Waste Programs Enforcement
Contract No. 68-W9-0006

TES 9

Technical Enforcement Support at Hazardous Waste Sites Zone III Regions 5,6, and 7

PRC
PRC Environmental Management, Inc.

PRC Environmental Management, Inc.
233 North Michigan Avenue
Suite 1621
Chicago, IL 60601
312-856-8700
Fax 312-938-0118

PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

BALL CORPORATION
MUNCIE, INDIANA
IND 000 810 713

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

Work Assignment No.	:	C05087
EPA Region	:	5
Site No.	:	IND 000 810 713
Date Prepared	:	March 4, 1993
Contract No.	:	68-W9-0006
PRC No.	:	009-C05087-IN2C
Prepared by	:	Resource Applications, Inc. (Michael W. Gorman)
Contractor Project Manager	:	Shin Ahn
Telephone No.	:	(312) 856-8700
EPA Work Assignment Manager	:	Kevin Pierard
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EXECUTIVE SUMMARY

Resource Applications, Inc. (RAI) performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Ball Corp. (Ball) facility in Muncie, Indiana. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified. In addition, a completed U.S. Environmental Protection Agency (EPA) Preliminary Assessment Form (EPA Form 2070-12) is included in Attachment A to assist in prioritization of RCRA facilities for corrective action.

Ball manufactures canning lids for glass jars and conducts research and development (R & D) on canning products. The facility receives precoated tin sheets, the primary material for the canning lids, from other Ball facilities. The sheets are cut and stamped, forming the securing ring and top, creating the two-part component of the canning lid. Plastisol is applied to the top, forming a gasket sealant. Plasticizer particulates generated during the plastisol application are managed and controlled by two Electrostatic Precipitators (SWMU 7). The majority of hazardous wastes, D001, F001, and F003, are generated during R & D. The wastes are managed in Satellite Accumulation Areas (SWMU 4) before transfer to Hazardous Waste Storage Area (SWMU 5), where the wastes are managed for less than 90 days. Hazardous wastes were previously managed for greater than 90 days in Building 56 (SWMU 1) and Building 48 (SWMU 2). Mineral spirits (D001) is used in facility maintenance painting operations. The waste is managed in Satellite Accumulations Areas (SWMU 4) prior to transfer to SWMU 5. Mineral spirits is also used in a parts cleaner, and from the mid-1960s to 1986, the wastes were discharged on the ground, outside Building 30 at the Mineral Spirits Disposal Area (SWMU 3). Waste hydraulic oil and motor oil generated from machinery and vehicle maintenance are managed in the Oil Storage Area (SWMU 6).

The 77-acre facility began operations in 1888, and until 1962, primarily manufactured glass jars. Since 1962, the facility has been involved with the manufacture of prefabricated buildings and plastic containers, as well as assembly of electronic gauges. In 1987, Ball-Incon Glass Packaging Corp. (Ball-Incon) was incorporated as a subsidiary of Ball and assumed all operations except the manufacturing of canning lids and R & D. In 1990, Plastics Packaging Products Company was

incorporated as a subsidiary of Ball and assumed the plastic container operations. Both subsidiaries have their own EPA hazardous waste generator ID numbers. Ball currently employs 421 people, with the majority working one shift.

Ball filed a RCRA Part A permit application on November 18, 1980 for a 10,000-gallon capacity container storage area (S01). The container storage area consisted of SWMU 1 and SWMU 2. The facility filed a closure plan for SWMU 1 and SWMU 2 in December 1988 and after several revisions, it was accepted in December 1989. Closure began in June 1990 and in January 1991, Ball filed an extension to complete closure. On October 3, 1991 the Indiana Department of Environmental Management (IDEM) determined that the closure met the requirements of 329 Indiana Administrative Code (IAC) 3-21. Ball is currently regulated as a small-quantity generator and manages wastes for less than 90 days.

The PA/VSI identified the following seven SWMUs and one AOC at the facility:

Solid Waste Management Units

1. Building 56
2. Building 48
3. Mineral Spirits Disposal Area
4. Satellite Accumulations Areas
5. Hazardous Waste Storage Area
6. Oil Storage Area
7. Electrostatic Precipitators

Area of Concern

1. Two 12,000-Gallon Gasoline Underground Storage Tanks (USTs)

Potential for release to ground water from SWMUs 1, 2, and 3 and AOC 1 is high because the ground water is located 10 feet below the surface and there have been documented releases to the soil. Potential for release to ground water from SWMUs 4, 5, 6, and 7 is low because the wastes are securely managed indoors. Because the White River is located 0.8 mile northeast of the facility, potential for release to surface water is low from all SWMUs and the one AOC. There was a high potential that some mineral spirits evaporated each time the waste was discharged at SWMU 3. Potential for release to air from the other SWMUs and AOC is low because the wastes and

commercial products were managed indoors or underground. Soil contamination has been documented from SWMUs 1, 2, and 3 and AOC 1. Soil analysis conducted during closure of SWMUs 1 and 2 detected contamination for heavy metals and semi-volatile organic compounds. The cause for contaminated soil around SWMU 1 is unknown. The cause of the contamination around SWMU 2 could be related to a July 24, 1988 water pipe rupture, in which 170,000 gallons entered the unit. The water drained from the unit through cracks in the floor and numerous waste containers were observed floating in the water. It has not been documented if any of the containers leaked. A release to the soil occurred each time mineral spirits was discharged in SWMU 3. An Agreed Order has been signed by Ball and IDEM representatives outlining the necessary remediation of SWMU 3. The facility has submitted a site assessment plan and according to IDEM, remediation will begin by March 1992. On August 11, 1986, approximately 3,000 gallons of gasoline were released to the soil around AOC 1. Gasoline was pumped from the ground and recovered until June 1990; however, no soil excavation occurred and according to Ball representatives, no further action is necessary. Potential for release to soils from SWMUs 4, 5, 6, and 7, is low because the wastes are securely managed indoors.

Ball, located at 1509 South Macedonia Avenue, Muncie, Indiana, is bordered on the north, east, and west by residences, the closest of which is 50 feet west of the facility. Ball Community Park borders the facility on the south. The closest school, Blaine Elementary School, is located approximately 1,000 feet northeast of the facility. The facility is fenced, has TV monitoring, and 24-hour security guards.

The facility and the City of Muncie receive their water from White River, and the closest intake is 2.5 miles upstream. There are two active industrial ground water wells located on site and extending into the bedrock at a depth of 200 feet.

There are no sensitive environments or wetlands within 2 miles of the facility.

Even though contamination was discovered during soil analysis conducted during the closure of SWMUs 1 and 2, closure was approved by IDEM. RAI recommends additional soil testing, in order to define and characterize the contamination discovered during closure. The facility should also continue with the directives set forth in the Agreed Order concerning SWMU 3. The soil and ground

water around AOC 1 should be analyzed to define and characterize the contamination. Once defined, the area should be remediated, if necessary.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC) received Work Assignment No. C05087 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5. Resource Applications, Inc. (RAI), TES 9 team member, provided the necessary assistance to complete the PA/VSI activities for the Ball Corp. (Ball) facility.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has generally exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading-unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release to the environment of hazardous waste or constituents has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where such a release in the future is judged to be a strong possibility.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff, inspecting the entire facility to identify all SWMUs and AOCs, photographing all SWMUs, identifying evidence of releases, initially identifying potential sampling locations, and obtaining all information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Ball facility in Muncie, Indiana. The PA was completed on January 20, 1992. RAI gathered and reviewed information from the Indiana Department of Environmental Management (IDEM) and from EPA Region 5 RCRA files. RAI also reviewed information that is relevant to the area of the facility from the U.S. Department of Agriculture (USDA), U.S. Geological Survey (USGS), Federal Emergency Management Agency (FEMA), Indiana Department of Natural Resources (IDNR), and the Indiana Geological Survey (IGS). The VSI was conducted on January 21, 1992. It included interviews with Ball representatives and a walk-through inspection of the facility. Seven SWMUs and one AOC were identified at the facility.

RAI completed EPA Form 2070-12 using information gathered during the PA/VSI. This form is included in Attachment A. The VSI is summarized and 12 inspection photographs are included in Attachment B. Field notes from the VSI are included in Attachment C. The report on a 1986 gasoline release is included as Attachment D. Soil analysis results from SWMU 1 are included as Attachment E and soil analysis results from SWMU 2 are included as Attachment F.

2.0 FACILITY DESCRIPTION

This section describes the facility's location, past and present operations (including waste management practices), waste generating processes, history of documented releases, regulatory history, environmental setting, and receptors.

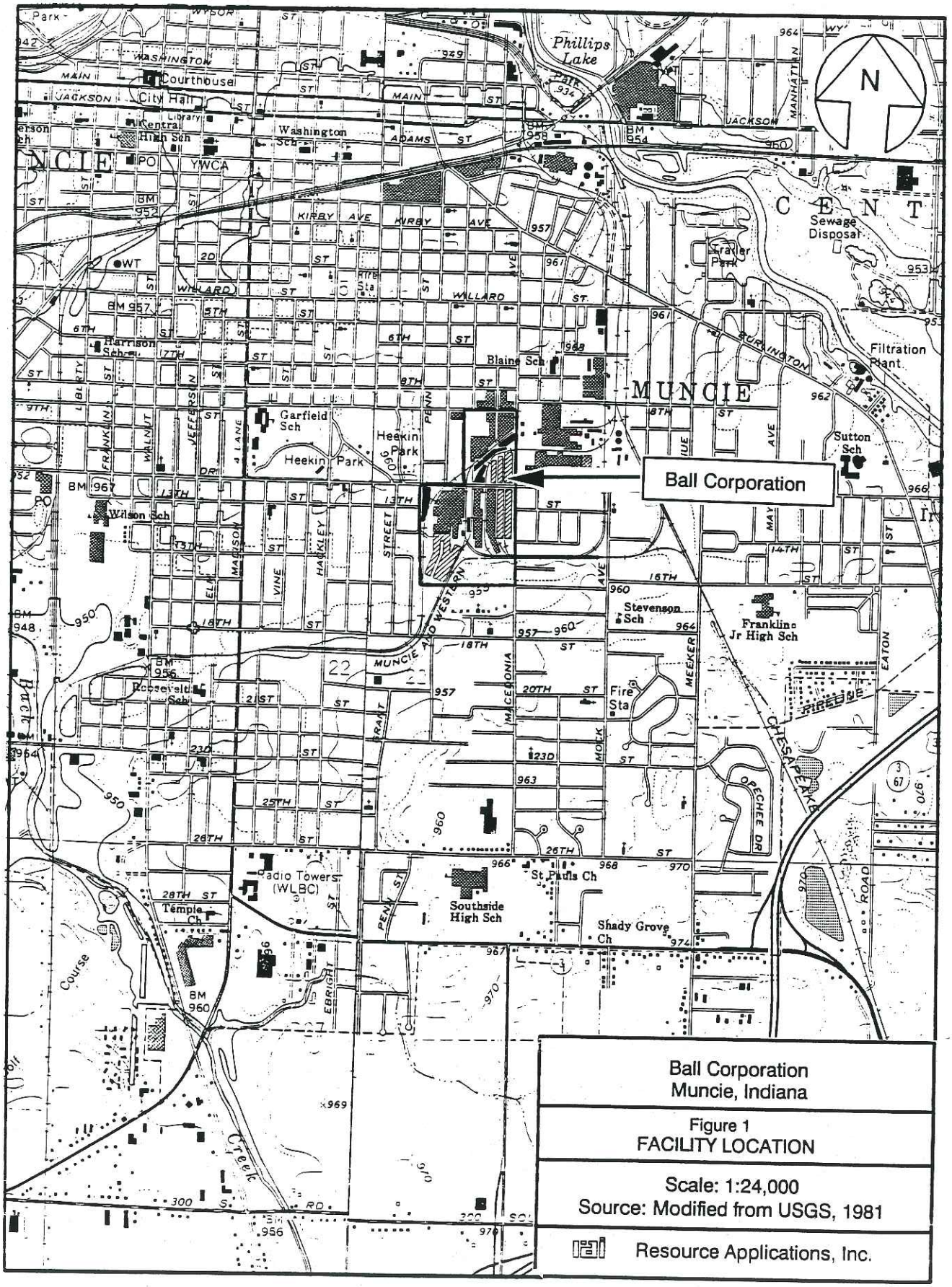
2.1 FACILITY LOCATION

The Ball facility is located in a residential area, at 1509 South Macedonia Avenue, Muncie, Delaware County, Indiana (latitude 40°10'30" N and longitude 85°20'15" W), as shown in Figure 1. The 77-acre facility is bordered on the north, east, and west by residences and on the south by Ball Community Park.

2.2 FACILITY OPERATIONS

In 1888, Ball began operations as a manufacturer of glass jars and related products. In 1962, Ball ceased the manufacture of glass jars and began concentrating on other products related to the canning industry. Since 1962, the facility has conducted research and development (R & D) on packaging products; manufactured canning lids, prefabricated buildings, and plastic containers; and also assembled electronic gauges used in glass manufacturing. Currently, the facility produces canning lids and conducts R & D.

Glass jars are manufactured by mixing silica sand, soda ash, limestone, and powdered selenium. The mixture is heated, poured into a mold, cooled, and boxed for shipping. The components making up the electronic gauges were produced off site and shipped to the facility for assembly. Ball manufactured prefabricated buildings under the name Pantek (1976 to 1977) and Ball Building Systems (1979 to 1981). The operation consisted of heating plastic pellets and pouring them into metal frames containing embedded stones. The product was cooled, dried, and packed for shipment. The manufacture of plastic containers also involved the heating of plastic pellets. The heated plastic was stamped and formed. After forming, labels were applied and the finished products were packed for shipment. All of the plastic pellets used were purchased off site. In 1987, Ball-Incon Glass Packaging Corp, (Ball-Incon) was incorporated as a subsidiary of Ball. Ball-Incon


Ball Corporation
N
MUNCIE
Courthouse
City Hall
Central High Sch
Washington Sch
YWCA
Phillips Lake Park
Sewage Disposal
Trailer Park
Filtration Plant
Garfield Sch
Heekin Park
Blaine Sch
Wilson Sch
Harrison Sch
Stevenson Sch
Franklin Jr High Sch
Sutton Sch
Fire Sta
Radio Towers (WLBC)
Temple Ch
Southside High Sch
St Pauls Ch
Shady Grove Ch
MAIN
JACKSON
WASHINGTON
ADAMS ST
KIRBY AVE
HURBY AVE
WILLARD
6TH
9TH
13TH
18TH
20TH
26TH
28TH ST
MUNCIE AND WESTERN
CHESAPEAKE
EATON
MEEKER
PENN ST
EBRIGHT
Creek
Course
ROAD
Ball Corporation
Muncie, Indiana
Figure 1
FACILITY LOCATION
Scale: 1:24,000
Source: Modified from USGS, 1981
Resource Applications, Inc.

assumed the assembly of electronic gauges and began manufacturing the gauges. In 1990, Plastics Packaging Products Company (Plastics) was incorporated as a subsidiary of Ball and assumed the plastic container operations. Both subsidiaries have their own EPA hazardous waste generator ID numbers.

Ball receives sheets of precoated tin, the main component in the canning lid operation, from other Ball facilities. The sheets are stamped and cut, forming the two-part lid (securing ring and top) with the top proceeding to the plastisol operation. Plastisol is a thick mixture of polyvinyl chloride resin, plasticizer, color pigments, and wetting compounds. The plastisol is mixed and applied to the outer rim of the top, forming the gasket sealant. The finished product is then packaged for shipping.

R & D on canning materials is conducted in a laboratory. The R & D consists of analysis on food packaging material, interior coatings for beverage containers, and structural integrity for metal containers.

Hazardous wastes at the Ball facility were initially managed in Building 56 (SWMU 1). Building 48 (SWMU 2) was used primarily as an overflow area; but, because of its larger size, became the main hazardous waste storage area. Outside of Building 30, at the Mineral Spirits Disposal Area (SWMU 3), is an area where waste mineral spirits was discharged. Currently, all hazardous wastes are managed in Satellite Accumulation Areas (SWMU 4) prior to transfer to the Hazardous Waste Storage Area (SWMU 5), for less than 90 day storage. Nonhazardous hydraulic oil and motor oil are managed in the Oil Storage Area (SWMU 6), the facility's maintenance garage. Plasticizer particulates, generated from the plastisol operation, are managed in two Electrostatic Precipitators (SWMU 7). Other than the disposal of mineral spirits at SWMU 3, facility representatives do not know how wastes were managed prior to 1980.

Ball had several underground storage tanks (USTs) that served a variety of purposes. Two 12,000-Gallon Gasoline USTs (AOC 1) were used to fuel facility vehicles. The tanks were closed in place in 1986. The facility previously used No. 2 fuel oil to heat production furnaces. The fuel oil was stored in an 18,000-gallon fuel oil UST and a 25,000-gallon fuel oil UST. Lubricant oil was stored in two 2,000-gallon lubricant oil USTs and naphtha was stored in a 250-gallon naphtha UST. In December 1991, Ontario Environmental, Inc. (Ontario) was contracted to close and remove all of

the USTs, except the 25,000-gallon fuel oil UST, which was closed in place. Soil analysis conducted by Ontario after the USTs were closed indicated that no contamination existed; therefore, no remediation of these areas was necessary (Ontario, 1992). A list of facility SWMUs is included as Table 1. The facility layout, including seven SWMUs and one AOC is included as Figure 2.

2.3 WASTE GENERATION AND MANAGEMENT

According to facility representatives, the primary wastes generated from the glass jar operations were cullet (broken glass) and bricks from the heating furnaces. According to facility representatives, these wastes were nonhazardous. The wastes were landfilled; but, facility representatives did not know by whom or at what rate they were generated. Plastic wastes, the only wastes generated from the prefabricated building and plastic container operations, were put back into the process or sold to recyclers. Wastes generated from the assembly of electronic gauges includes solder and defective products. These wastes were discarded with general refuse.

The primary waste streams generated from current operations include degreasing solvents, mineral spirits, painting materials, discarded laboratory material, hydraulic oil, and motor oil. Table 2 contains a list of solid wastes generated at the facility.

The facility conducted degreasing operations from 1971 to 1987, when Ball-Incon acquired the operations. Trichloroethane (TCA) and trichloroethylene (TCE) were both used to clean equipment. Production equipment was lowered into the degreasing unit and had TCA or TCE sprayed on it. Beginning in 1980, the waste solvents (F001) and bottoms were managed in SWMUs 1 and 2. Generated at a rate of 12 drums per year, the wastes were removed by Safety-Kleen, Corp., Indianapolis, Indiana. Prior to 1980, facility representatives had no knowledge how wastes were managed.

Mineral spirits is used in parts washers to clean grease off maintenance equipment. Waste mineral spirits (D001), generated from the cleaning operations, were discharged on the ground, at the Mineral Spirits Disposal Area (SWMU 3) from the mid-1960s until 1986. The waste was generated and discharged at a rate of 10 to 20 gallons per month. The waste was managed in SWMU 2 from August 1986, when the disposal method was discovered, until 1990, when the clean closure of

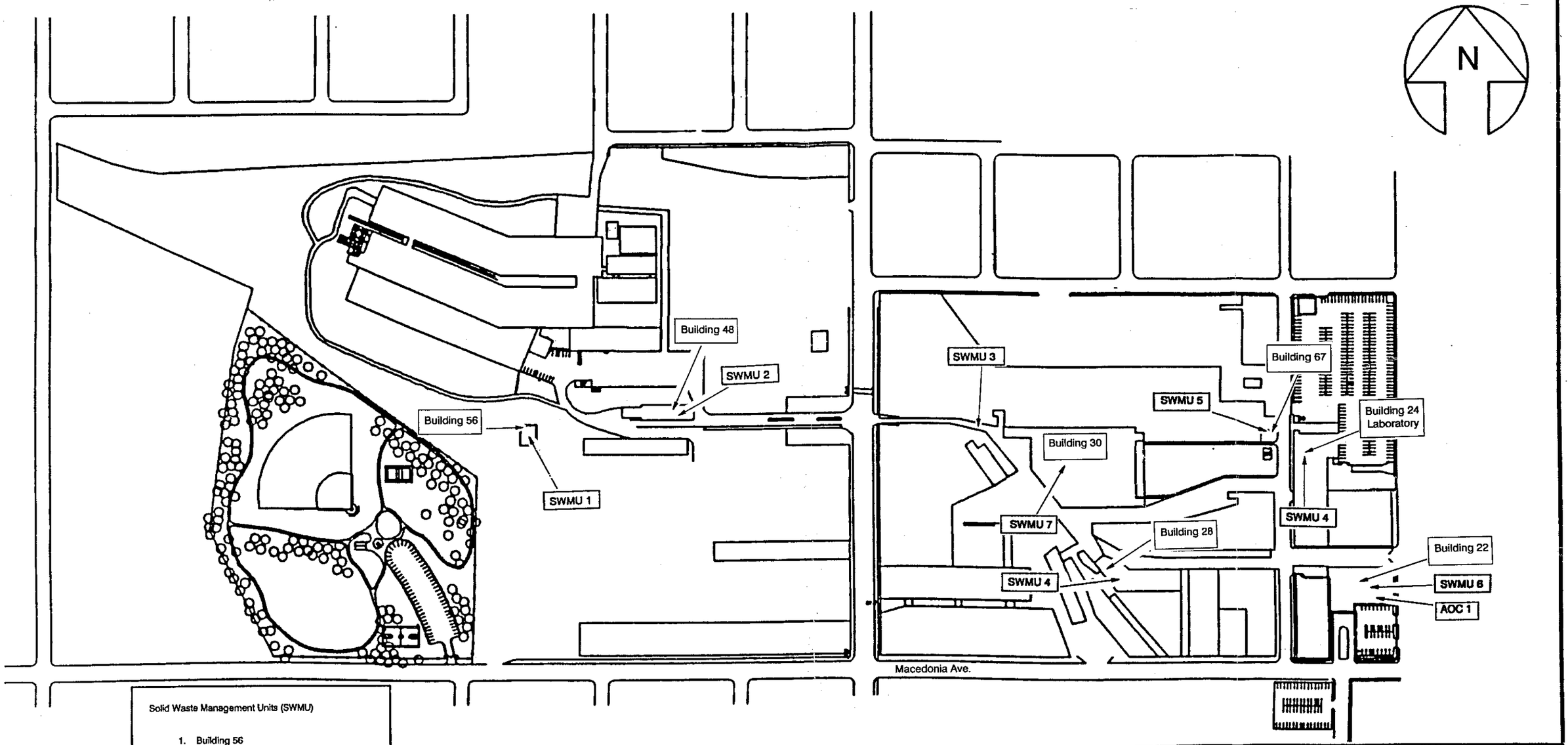
TABLE 1

SOLID WASTE MANAGEMENT UNITS (SWMU)

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit*	Status
1	Building 56	Yes	The unit was razed in November, 1984 and clean closed in October, 1991.
2	Building 48	Yes	Inactive, clean closed in October, 1991.
3	Mineral Spirits Disposal Area	No	Inactive as of August, 1986. Site assessment plan is under review by IDEM.
4	Satellite Accumulation Areas	No	Active
5	Hazardous Waste Storage Area	No	Active, less than 90-day storage of hazardous wastes.
6	Oil Storage Area	No	Active, manages nonhazardous wastes.
7	Electrostatic Precipitators	No	Active, manages nonhazardous wastes.

Note:

* A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.



Solid Waste Management Units (SWMU)

1. Building 56
2. Building 48
3. Mineral Spirits Disposal Area
4. Satellite Accumulation Areas
5. Hazardous Waste Storage Area
6. Oil Storage Area
7. Electrostatic Precipitators

Area of Concern (AOC)

1. Two 12,000-Gallon Gasoline Underground Storage Tanks (USTs)

Ball Corporation
Muncie, Indiana

Figure 2
FACILITY LAYOUT/SWMU AND AOC LOCATIONS

Scale: 1" = 500'
Source: Ball, 1980b

Resource Applications, Inc.

TABLE 2

SOLID WASTES

Waste/EPA Waste Code	Source	Primary Management Unit*
Cullet and Bricks/NA**	Glass Jar Operations	Landfilled off site
Trichloroethane/F001	Degreasing Operations	SWMUs 1 and 2
Trichloroethylene/F001	Degreasing Operations	SWMUs 1 and 2
Mineral Spirits/D001	Maintenance Operations	SWMUs 1, 2, 3, 4, and 5
Paint/D001	Maintenance Operations	SWMUs 1, 2, 4, and 5
Acetone/F003	R & D	SWMUs 1, 2, 4, and 5
Methyl ethyl ketone/F005	R & D	SWMUs 1, 2, 4, and 5
Methyl isobutyl ketone/F003	R & D	SWMUs 1, 2, 4, and 5
Toluene/F005	R & D	SWMUs 1, 2, 4, and 5
Methylene Chloride/U080	R & D	SWMUs 1, 2, 4, and 5
Toluene Diisocyanate/U226	R & D	SWMUs 1, 2, 4, and 5
Mercury/D009	R & D	SWMUs 1, 2, 4, and 5
Methanol/F001	R & D	SWMUs 1, 2, 4, and 5
Hydraulic Oil/NA**	Maintenance Operations	SWMUs 2 and 6

Note:

* Primary management unit refers to a SWMU that currently manages or formerly managed the waste.

** Nonapplicable (NA) designates nonhazardous waste.

TABLE 2 (continued)

SOLID WASTES

Waste/EPA Waste Code	Source	Primary Management Unit*
Motor Oil/NA**	Maintenance Operations	SWMUs 2 and 6
Plasticizer Particulates/NA**	Plastisol Process	SWMU 7
Asbestos/U013	Maintenance	Not managed on site as a waste.
PCBs	Maintenance	Not managed on site as a waste.

Note:

* Primary management unit refers to a SWMU that currently manages or formerly managed the waste.

** Nonapplicable (NA) designates nonhazardous waste.

SWMU 2 began. The waste was managed in SWMU 5 from 1990 until January 1991. Heritage removed the wastes from SWMU 5 at a rate of 3 drums per year. As of August 1991, Safety-Kleen has removed the mineral spirits directly from the parts washers, thus no waste is managed on site.

Mineral spirits is also used to clean painting equipment used in facility maintenance. Ball began in-house maintenance painting operations in September 1987. The paint is applied by brushing, rolling, or spraying. The used brushes and rollers are placed in a 5-gallon plastic bucket of mineral spirits and cleaned. The spray equipment is cleaned by flushing mineral spirits through the lines and into the same 5-gallon bucket used to clean brushes and rollers. The 5-gallon mixture of paint and waste mineral spirits (D001) are poured into a 55-gallon drum and managed in a Satellite Accumulation Area (SWMU 4) prior to transfer to SWMU 5. When SWMUs 1 and 2 were operating, the waste was transferred to those areas, prior to off-site shipment. The waste is generated at a rate of 2 drums per year and is picked up by Heritage.

The facility laboratory is used to conduct R & D on products associated with the food industry. The R & D laboratory analyzes glass and wastewater samples generated from other Ball facilities, structural integrity of beverage cans, and coatings for the interior and exterior of beverage cans. The wastes: spent acetone (F003), spent methyl ethyl ketone (MEK) (F005), spent methyl isobutyl ketone (MIK) (F003), spent toluene (F005), discarded methylene chloride (U080), discarded toluene diisocyanate (U226), mercury (D009), and spent methanol (F003), are managed in four separate Satellite Accumulation Areas (SWMU 4), located throughout the laboratory. When 5 gallons are accumulated, the wastes are lab-packed and transferred to SWMU 5 where they are removed by Heritage. Ball generates approximately 35 gallons of laboratory wastes per year.

Plasticizer particulate emissions are generated during the application of plastisol sealant to the canning top. The particulates are vacuumed into two Electrostatic Precipitators (SWMU 7). Water is pumped through the system and is collected, along with the particulates, in a tank and discharged into the Muncie Sanitary District (MSD) at a rate of 200 gallons per month.

Hydraulic oil from production machinery and motor oil from facility vehicles are managed in the Oil Storage Area (SWMU 6). The hydraulic oil is pumped from the machines into 55-gallon drums and transferred to SWMU 6. Motor oil is transferred from facility vehicles into 5-gallon

buckets and 55-gallon drums inside Building 22, the same building where SWMU 6 is located. The hydraulic oil and motor oil are picked up by Johnson Petroleum, Inc., Indianapolis, Indiana at the rate of 1,000 to 1,500 gallons per year. Prior to 1987, the wastes were managed in SWMUs 1 and 2.

Polychlorinated biphenyls (PCBs) have been removed on two separate occasions and asbestos has been removed on three separate occasions. In 1986, two transformers containing PCBs, were removed from Building 21. In 1989, 50 small capacitors containing PCBs were removed from Building 29. Both removals were conducted by Enesco, Inc., who transported the wastes to El Dorado, Arkansas, for incineration. In the fall of 1987, asbestos insulation was removed from Building 21; in the fall of 1989, asbestos roofing was removed from Building 29; and in January 1992, asbestos floor tiles were removed from Building 24. On January 25, 1992, asbestos roofing is scheduled to be removed from Building 48 (SWMU 2). Liberty Environmental Services, Inc. removed the asbestos for disposal at the Randolph County Farms, Inc. Landfill, Randolph County, Indiana (Randolph landfill). Neither PCBs nor asbestos wastes are managed on site.

2.4 HISTORY OF DOCUMENTED RELEASES

This section discusses the history of documented releases to ground water, surface water, air, and on-site soils, at the Ball facility.

On August 11, 1986, IDEM was notified by Ball representatives, that approximately 100 gallons of unleaded gasoline had released from Two 12,000-Gallon Gasoline USTs (AOC 1) (IDEM, 1986b). ATEC Associates, Inc. (ATEC) was contracted by Ball to determine the extent of the release. ATEC estimated that approximately 3,000 gallons of gasoline existed in the soil and approximately 925 cubic yards of soil were contaminated (ATEC, 1986). The ATEC report is included as Attachment D.

On August 12, 1986, while conducting a RCRA inspection, IDEM representatives discovered that Ball employees had been discharging waste mineral spirits at the rate of 10 to 20 gallons per month on the ground at SWMU 3. This method of waste disposal had been going on since the mid-1960s. An Agreed Order was signed on November 26, 1989, outlining the remediation plan for this

release (IDEM, 1989). According to IDEM representatives, the site assessment plan is under review and implementation should begin by March 1992.

In September 1986, phosphorus pentoxide released from a corroded drum inside SWMU 2. The release was contained inside the building and the material was neutralized with sodium carbonate. The neutralized waste was absorbed and placed in a new 55-gallon drum and managed in SWMU 2.

In September 1987, while performing routine excavation work, Ball employees discovered areas of possible fuel oil contamination. Previously, a 500,000-gallon aboveground tank containing No. 6 fuel oil was located in the area of excavation. Facility representatives stated that the tank was removed in 1971. It is not known when the exact release occurred. ATEC was contracted by Ball to determine the extent of contamination through soil analysis. Once the extent of contamination was determined, 535 cubic yards of contaminated soil were removed and disposed of at Randolph landfill. The remaining soil was analyzed after the soil removal and no detectable levels of contamination were identified (ATEC, 1988).

Soil analysis conducted during the closure of SWMU 1 detected arsenic and TCE contamination. The exact cause has not been determined. The areas where contamination was observed have yet to be remediated. For soil analysis results, see Attachment E.

On July 24, 1988, an underground water line ruptured beneath SWMU 2, releasing approximately 170,000 gallons of water into the unit. At the time of the release, 424 containers with a capacity of 30 gallons or greater and 4,359 containers with a capacity of 5 gallons or less, were stored in the unit. The entire building floor was covered with 8 inches of water and numerous containers were observed floating. The water flowed through the building, onto the adjacent soil, and into the sanitary sewer system. It is not known how much waste material leaked into the water. In December 1988, Ball submitted a closure plan for SWMU 2 and was informed by IDEM that soil sampling must be conducted outside Building 48, to determine if the July 24 release caused any contamination. Soil analysis conducted by Maecorp, Inc. detected levels of contamination for barium, cadmium, and semi-volatile organic compounds. The areas where contamination was observed have yet to be remediated. For soil analysis results, see Attachment F

2.5 REGULATORY HISTORY

Ball submitted a Notification of Hazardous Waste Activity to EPA on August 18, 1980 (Ball, 1980a). On November 18, 1980, the facility filed a Part A permit application listing a S01 process with a capacity of 10,000 gallons (Ball, 1980b). The S01 code referred to SWMUs 1 and 2. The Part A permit listed F001, F002, F003, F004, F005, U013, U159, U161, U220, U080, U226, U227, U228, U239, U223, D009, and U154 wastes. Facility representatives stated that wastes listed on the Part A application were generated primarily during R & D and commingled prior to storage. Therefore, not all wastes listed on the Part A appear as the wastes managed at the facility.

Ball filed a closure plan in December 1988 for SWMUs 1 and 2. The plan was approved in December 1989 and the facility began closure in June, 1990. In January 1991, the facility filed an extension to complete the closure. A letter from IDEM to the Ball facility on October 3, 1991 stated that the closure met the requirements of 329 Indiana Administrative Code (IAC) 3-21 (IDEM, 1991). The facility is now regulated as a generator only.

An August 12, 1986 RCRA inspection by IDEM revealed several paperwork violations. The inspection also revealed that SWMU 2 was managing more than 600 drums (permitted for 181) and some were leaking and deteriorating. During the inspection, IDEM discovered that Ball employees were dumping mineral spirits and 2,4-D weed killer at SWMU 3 (IDEM, 1986a). A Complaint, Proposed Final Order, and Opportunity for Administrative Review were issued on May 7, 1987, outlining Ball's necessary response to the above mentioned violations (IDEM, 1987). On July 27, 1988, IDEM conducted an inspection to assess the damage of the July 24, 1988 water main rupture (IDEM, 1988). The inspection revealed the same violations discovered in the August 12, 1986 inspection. A subsequent complaint was filed by IDEM and an Agreed Order was signed by Ball and IDEM on November 26, 1989 detailing the steps Ball must take to comply with the above mentioned violations and also outlining Ball's remediation plan for the soil contamination at SWMU 3. A compliance evaluation inspection (CEI) was conducted on September 19, 1990, by Metcalf and Eddy, Inc. (EPA contractors) (IDEM, 1990). This inspection also served as a follow-up to determine the facility's compliance with the Agreed Order. Numerous paperwork violations were discovered. Ball had also not adequately addressed the sampling and remediation procedures concerning the disposal of mineral spirits at SWMU 3. According to EPA and IDEM representatives, the violations discovered

during the CEI are under enforcement and the facility has resubmitted a site assessment plan concerning SWMU 3.

Ball has an air permit for two Electrostatic Precipitators (SWMU 7), used to control particulate emissions generated during the plastisol application. There have been no documented air permit violations.

The facility has no history of odor complaints from area residents or neighboring facilities. The facility does not have, or need, a National Pollutant Discharge Elimination System (NPDES) permit.

2.6 ENVIRONMENTAL SETTING

This section describes the climate, flood plain and surface water, geology and soils, and ground water in the vicinity of the Ball facility.

2.6.1 Climate

The climate in Delaware County is temperate and continental with frequent short-term fluctuations in temperature and humidity. The average daily temperature is 52.1°F. The lowest average daily temperature is 19.6°F in January. The highest average daily temperature is 86.4°F in July.

The total annual precipitation for the county is 39.57 inches (USDC, 1967). The mean annual lake evaporation for the area is about 32.5 inches (USDC, 1968). The 1-year, 24-hour maximum rainfall is 4.35 inches (USDC, 1967).

The prevailing wind is from the southwest. Average wind speed is highest in March at 11.7 miles per hour from the west-northwest. The average wind speed is 9.6 miles per hour from the southwest (USDC, 1967).

Average annual snowfall is 21.3 inches. Precipitation is greatest in late spring and early summer, with the winter months being the driest (USDC, 1967).

2.6.2 Flood Plain and Surface Water

The Ball facility is located outside the 500-year flood plain in an area of minimal flooding (FEMA, 1987). The nearest surface water body, White River, is located approximately 0.8 mile northeast of the facility, and is used for recreational, industrial, and municipal water supply purposes. This surface water body ultimately discharges to the Wabash River.

Surface water drainage at the facility is mostly directed into the MSD. The facility does not hold a NPDES permit.

There are no other major surface water bodies, wetland areas, or sensitive environments within 2 miles of the facility.

2.6.3 Geology and Soils

The soils beneath the Ball facility are predominantly those of the Crosby silt loam unit. This is a deep, nearly level, somewhat poorly drained soil derived from glacial till and loess. The surface layer ia dark grayish-brown silt loam about 7 inches thick underlain by 2 inches of grayish-brown silt loam. The subsoil is yellowish-brown silty clay loam, and is about 23 inches thick. Available moisture capacity is high and permeability is slow. The Rensselaer silty clay loam occurs in the southwestern part of the property and is a deep, very poorly drained soil derived from sandy and silty lacustrine sediments. The surface layer is very dark gray or brown silty clay loam about 12 inches thick, with a subsoil of gray clay loam underlain by sand, silt, and silty clay loam. Available moisture capacity is high, and permeability is slow (USDA, 1972).

The drift, or unconsolidated, deposits beneath the facility mainly consist of glacial till with discontinuous lenses of stratified sand and gravel. The upper 5 feet of drift at the facility consists of gravel, brick, and cinder fill material, underlain by sandy and silty clay. A 5-foot thick sand and

gravel lens is encountered 10 feet below the ground surface in some areas of the facility. Bedrock is encountered at depths of between 7.5 feet and greater than 25 feet (ATEC, 1986).

The uppermost bedrock in the area consists of Silurian rocks of the Salamonie Dolomite, Cataract Formation, and Brassfield Limestone. These units are a significant source of ground water in the Muncie area. These units are underlain by the Ordovician Maquoketa Group shales and limestones, and presumably by Cambrian and Precambrian rocks at depth (IGS, 1987).

2.6.4 Ground Water

No site-specific information on ground water was available, thus regional information is presented here. Unconsolidated sand and gravel lenses in drift deposits make up the primary aquifers in the Muncie area. The average transmissivity of these material is about 2,200 square feet per day (ATEC, 1986).

The Silurian dolomite and limestones can provide significant quantities of ground water to wells, with an average transmissivity of 1,000 square feet per day, which is highly variable due to the development of secondary permeability. Ground water flow in the vicinity of the site is to the north, toward the White River (ATEC, 1986).

All of Muncie's municipal water supply is derived from surface water, namely the White River; thus, the community is not dependent upon ground water for its water supply (IAWC, 1992).

2.7 RECEPTORS

The Ball facility occupies 77 acres in a residential area in Muncie, Indiana. Muncie has a population of about 77,000.

The Ball facility is bordered on the north, east, and west by residences, with the closest 50 feet to the west. Ball Memorial Park borders the facility to the south. The closest school is Blaine Elementary, located 1,000 feet northeast of the facility. Facility access is controlled by a chain-link fence, TV monitoring, and 24-hour security guards.

The closest surface water body, White River, is located approximately 0.8 mile northeast of the facility and is used for recreational, industrial, and municipal water supply purposes. The facility is located 2.5 miles downstream of the intake for municipal drinking water. There are no other major surface water bodies in the area.

Ground water is not used for drinking water supplies. There are two water wells on site, at a depth of 200 feet and are used for industrial cooling. There are no private residential ground water wells within a 2-mile radius of the facility.

There are no sensitive environments or wetlands within 2 miles of the facility.

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the seven SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and RAI's observations.

SWMU 1	**Building 56**
Unit Description:	Building 56 was located on the southern portion of facility property. The unit was used to manage hazardous wastes for greater than 90 days. The 25-foot by 25-foot steel framed unit had brick curtain walls and a concrete floor (see Photograph No. 1).
Date of Startup:	The unit began operations in 1980.
Date of Closure:	The unit was demolished in November 1984, before undergoing closure. The area was certified clean closed according to 329 IAC 3-21 on October 3, 1991.
Wastes Managed:	This unit managed the following spent or discarded materials: TCA (F001), TCE (F001), mineral spirits (D001), paint (D001), acetone (F003), MEK (F005), MIK (F003), toluene (F005), methylene chloride (U080), toluene diisocyanate (U226), mercury (D009), methanol (F003), hydraulic oil (nonhazardous), and motor oil (nonhazardous).
Release Controls:	The wastes were managed inside a building that had a concrete floor. According to the closure plan, there was no other secondary containment in the unit.
History of Documented Releases:	Soil testing conducted during closure detected contamination outside the perimeter of the building.

Observations:	The unit was removed in November 1984. The area was covered with snow; therefore, RAI did not observe the ground where the unit existed.
SWMU 2	**Building 48**
Unit Description:	Building 48 is located north of SWMU 1 and was used to manage wastes for greater than 90 days. The 9,000-square-foot steel framed building had brick curtain walls and a 6 inch concrete floor (see Photograph No. 2).
Date of Startup:	This unit began operations in 1982.
Date of Closure:	On October 3, 1991, the unit met the closure requirements of 329 IAC 3-21.
Wastes Managed:	This unit managed the following spent or discarded materials: TCA (F001), TCE (F001), mineral spirits (D001), paint (D001), acetone (F003), MEK (F005), MIK (F003), toluene (F005), methylene chloride (U080), toluene diisocyanate (U226), mercury (D009), methanol (F003), hydraulic oil (nonhazardous), and motor oil (nonhazardous).
Release Controls:	The unit is underlain by 6 inches of concrete and a concrete block dike surrounds the interior perimeter of the unit.
History of Documented Releases:	On July 24, 1988, an underground water pipe ruptured releasing approximately 170,000 gallons of water into the unit. Some wastes were observed floating in the 8 inches of water that covered the floor. Soil analysis conducted during closure detected contamination outside, immediately east of the building.

Observations:	The unit was empty at the time of the VSI. While walking through the unit, RAI observed cracks in the floor. The unit is scheduled to have asbestos roofing removed, and later in 1992 will be torn down.
SWMU 3	**Mineral Spirits Disposal Area**
Unit Description:	The unit is located outside, south of Building 30, and was used as a disposal area for waste mineral spirits and 2,4-D weed killer. According to facility representatives, the disposal area was approximately 2,500 square feet of unlined soil (see Photograph No. 3).
Date of Startup:	Facility representatives did not know the exact start-up date; but estimated the mid-1960s.
Date of Closure:	The facility ceased disposing wastes in this manner in 1986.
Wastes Managed:	This unit managed spent mineral spirits (D001).
Release Controls:	The unit was an area of unlined soil and had no release controls.
History of Documented Releases:	A release occurred each time wastes were discharged.
Observations:	The area was covered with snow, so no evidence of a release was observed. The facility has submitted a site assessment plan to IDEM concerning remediation of the area.

SWMU 4	**Satellite Accumulation Areas**
Unit Description:	Satellite Accumulation Areas consist of two distinct areas located in the painting building (Building 28) and the laboratory (Building 24). The mineral spirits generated from the painting operation is managed in a 55-gallon drum stored inside Building 28, a 400 square foot unit with a concrete floor. Building 24 is 18,000 square feet, with a tile floor underlain by concrete. The wastes generated in the laboratory are managed in four separate areas. Chlorinated solvents and nonchlorinated solvents are managed separately. Wastes are placed in glass bottles inside separate cabinets. The wastes are then transferred into lab-pack containers inside a covered hood. The lab-pack containers are then transferred to SWMU 5 (see Photographs No. 4 - 8).
Date of Startup:	The laboratory began managing wastes in 1980. The painting operations began in 1987.
Date of Closure:	This unit is currently active.
Wastes Managed:	This unit manages the following spent or discarded materials: mineral spirits (D001), paint (D001), acetone (F003), MEK (F005), MIK (F003), toluene (F005), methylene chloride (U080), toluene diisocyanate (U226), mercury (D009), and methanol (F003).
Release Controls:	The cabinet areas have a 2-foot by 2-foot metal tray in which the glass jars are placed. The lab-pack containers have vermiculite to absorb a potential release. There are no release controls around the mineral spirits drum.
History of Documented Releases:	No releases from this unit have been documented.

Observations:	During the VSI, no evidence of a release was noted. All wastes appeared to be well-managed.
SWMU 5	**Hazardous Waste Storage Area**
Unit Description:	This 15-foot by 20-foot unit is located in Building 67 and is used to manage hazardous wastes for less than 90 days. The unit has prefabricated walls (plastic/stone), an 8-inch cinderblock berm on the interior, and is underlain by 4 to 6 inches of concrete (see Photograph No. 9).
Date of Startup:	The unit began operations in 1988.
Date of Closure:	The unit is currently active.
Wastes Managed:	This unit manages the following spent or discarded materials: mineral spirits (D001), paint (D001), acetone (F003), MEK (F005), MIK (F003), toluene (F005), methylene chloride (U080), toluene diisocyanate (U226), mercury (D009), and methanol (F003).
Release Controls:	The unit has an 8-inch high cinderblock berm along the interior and is underlain by a 4 to 6 inch concrete floor.
History of Documented Releases:	There have been no documented releases from this unit.
Observations:	The unit did not contain any wastes at the time of the VSI. The unit appeared well-managed and no cracks or floor drains were noted.
SWMU 6	**Oil Storage Area**
Unit Description:	This unit is located indoors, inside Building 22 and is used to store waste hydraulic oil and motor oil generated at the facility. The 700-

	square-foot building has a concrete floor and is also used to house facility vehicles. The motor oil generated at the facility originates from vehicles serviced in this building. The wastes are managed in 55-gallon drums and 5-gallon buckets (see Photographs No. 10 and 12).
Date of Startup:	The unit began operations in 1987.
Date of Closure:	The unit is currently active.
Wastes Managed:	This unit manages waste hydraulic oil and motor oil.
Release Controls:	The unit has a concrete floor and no floor drains were noted.
History of Documented Releases:	There have been no documented releases from this unit. However, approximately 1 gallon of motor oil was observed on the floor.
Observations:	The unit contained numerous 5-gallon buckets and 55-gallon drums of waste oil. Oil was observed on the floor. It is possible that it was generated from the maintenance of facility vehicles.
SWMU 7	**Electrostatic Precipitators**
Unit Description:	The Electrostatic Precipitators are located inside Building 30 and are used to control plasticizer particulate emissions generated from the plastisol operation. The stack is 45 feet high and has a 24-inch diameter. Particulates are collected in water and vacuumed into a 2.5-foot by 6.2-foot by 4-foot steel tank. On a monthly basis, the particulates and water are discharged to the MSD (see Photograph No. 11).
Date of Startup:	This unit began operations in 1976.

Date of Closure:	This unit is currently active.
Wastes Managed:	This unit manages plasticizer particulates and water.
Release Controls:	Particulates are vacuumed at greater than 95 percent efficiency, and are collected in a steel tank.
History of Documented Releases:	There have been no documented releases from this unit.
Observations:	The steel tank appeared sound and no evidence of a release was observed.

4.0 AREAS OF CONCERN

RAI identified one AOC during the PA/VSI. This AOC is discussed below and its locations is shown in Figure 2.

AOC 1 **Two 12,000-Gallon Gasoline USTs**

Ball previously had Two 12,000-Gallon Gasoline USTs, located under Building 22, which were used for facility vehicles. The tanks were closed in place in October 1986. On August 11, 1986, a gasoline leak was detected by the facility and IDEM was notified. ATEC was contracted by Ball to conduct an assessment and determine the extent of contamination. Ball representatives estimated the release at 100 gallons, and on September 15, 1986 was granted a special waste disposal permit by IDEM for the disposal of 20 cubic yards of gasoline-contaminated soil at the Randolph landfill. On November 25 and 26, 1986, invoices indicate that 10 cubic yards were disposed of each day at the landfill. This area is an AOC because the ATEC report indicates that the release was much greater in scope, and full remediation has yet to be completed. According to the ATEC report, the estimated release was approximately 3,000 gallons, and 925 cubic yards of soil were contaminated with vapor and product. According to facility representatives, gasoline was pumped from the ground and recovered until June 1987, when the project was abandoned. However, the only soil that was removed was the 20 cubic yards in November 1986 (see Photograph No. 12).

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified seven SWMUs and one AOC at the Ball facility. Background information on the facility's location, operations, waste generating processes, history of documented releases, regulatory history, environmental setting, and receptors is presented in Section 2.0. SWMU-specific information, such as each unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is discussed in Section 3.0. AOCs are discussed in Section 4.0. Following are RAI's conclusions and recommendations for each SWMU and AOC. Table 3, at the end of this section, summarizes the SWMUs and AOC at the Ball facility and recommended further actions.

SWMU 1 **Building 56**

Conclusions: The unit was used to manage wastes from 1980 to 1982, for greater that 90 days. In November 1984, the building was demolished before officially undergoing RCRA closure. The unit was closed according to 329 IAC 3-21 on October 3, 1991. However, soil analysis conducted during closure detected contamination for arsenic and TCE. Because the ground water is located at a depth of 10 feet below the surface, there is a high possibility that contaminants entered it. The contamination is contained underground; therefore, potential for release to surface water and air is low.

Recommendations: Additional soil testing should be conducted in order to define and characterize the contaminants.

SWMU 2 **Building 48**

Conclusions: The unit was used to manage wastes for greater than 90 days from 1982 to 1988. In July 24, 1988 a water pipe ruptured underneath the unit releasing approximately 170,000 gallons of water into the building. Soil analysis conducted during closure revealed some

contamination for barium, cadmium, and semi-volatile organic compounds. Because the ground water is located at a depth of 10 feet below the surface, there is a high probability that contaminants entered it. The contamination is contained underground; therefore, potential for release to surface water and air is low.

Recommendations: Additional soil testing should be conducted in order to define and characterize the contaminants.

SWMU 3 **Mineral Spirits Disposal Area**

Conclusions: This unit consists of an area where mineral spirits was discharged onto unlined soil from the mid-1960s until 1986. After a CEI in 1986, this disposal practice stopped. An Agreed Order was signed by IDEM and Ball representatives, on November 26, 1989. The Agreed Order stated that 90 days after the effective date, a site assessment plan must be submitted and 30 days after submittal, acted upon. IDEM is currently reviewing the site assessment plan and anticipates Ball Representatives will begin action by March 1992. A release to the soil occurred each time wastes were discharged. Because the ground water is located at a depth of 10 feet, there is a high potential that the wastes entered it. There is a low potential that the wastes entered the White River via ground water. Because mineral spirits is a highly volatile substance, there is a high potential that, upon disposal, some wastes evaporated and contaminated the air.

Recommendations: The Ball facility should continue to follow the guidelines set forth in the Agreed Order concerning the remediation of the area.

SWMU 4 **Satellite Accumulation Areas**

Conclusions: The Satellite Accumulation Areas are used to manage mineral spirits generated from painting operations and numerous chlorinated and nonchlorinated wastes generated from R & D. The mineral spirits is managed in a 55-gallon drum that is underlain by a concrete floor. When full, the drum is transferred to SWMU 5. The R & D wastes are managed in glass bottles and transferred to SWMU 5 in 5-gallon plastic lab-packs. The wastes are securely managed; therefore, potential release to ground water, surface water, air, or on-site soils is low.

Recommendations: RAI recommends no further action for this unit.

SWMU 5 **Hazardous Waste Storage Area**

Conclusions: This unit manages wastes for less that 90 days. The wastes are kept in drums, indoors, on a concrete floor, and are surrounded by a cinderblock berm. Because the wastes are securely managed, potential for release to ground water, surface water, air, or on-site soils is low.

Recommendations: RAI recommends no further action for this unit.

SWMU 6 **Oil Storage Area**

Conclusions: This unit is used to manage nonhazardous waste hydraulic oil and motor oil. The area also is used to conduct maintenance of facility vehicles. The wastes are stored indoors, in 5-gallon buckets and 55-gallon drums and the building has a concrete floor. Other than the general oil and grease associated with a maintenance garage, no excess oil was observed on the floor. Potential for release to ground water, surface water, air, or on-site soils is low.

Recommendations: RAI recommends no further action for this unit.

SWMU 7 **Electrostatic Precipitators**

Conclusions: This unit is used to manage and control plasticizer particulates generated from the plastisol operations. The particulates are vacuumed into the precipitators where a water spray is applied. The water and particulate mixture is collected in a steel tank and discharged on a monthly basis to the MSD. According to facility representatives, a discharge permit is not required. Because the wastes are managed indoors, potential for release to ground water, surface water, and on-site soils is low. The unit controls particulates at a 95 percent efficiency; therefore, potential for significant release to air is also low.

Recommendations: RAI recommends no further action for this unit.

AOC 1 **Two 12,000-Gallon Gasoline USTs**

Conclusions: A release from these USTs was detected on August 11, 1986. According to soil analysis by ATEC, approximately 3,000 gallons of gasoline were released and 925 cubic yards of soil were contaminated. The tanks were filled with concrete slurry on October 30 and 31, 1986. On November 25 and 26, 1986 a total of 20 cubic yards of gasoline- contaminated soil were sent to the Randolph landfill for disposal. The facility pumped and recovered gasoline from the soil until June 1987, when the project was abandoned. The remaining 905 cubic yards of contaminated soil were not remediated. There is a high probability that contamination entered the ground water, which is located at a depth of 10 feet below the surface. White River is located 0.8 mile northeast of the facility; therefore, there is a low probability that some contamination entered the White River via ground water

flow. Because the contamination is contained underground, potential for release to air is low.

Recommendations:

RAI recommends soil and ground water analysis to define and characterize the extent of contamination. If sufficient levels of contamination are detected, the area should be remediated.

TABLE 3

SWMU AND AOC SUMMARY

SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
1. Building 56	1980 to 1982	Soil analysis conducted during closure detected contamination.	Because soil contamination was detected, additional analysis should be conducted to define and characterize the contaminants.
2. Building 48	1982 to 1988	On July 24, 1988 170,000 gallons of water entered the unit. Soil analysis conducted during closure detected contamination.	Because soil contamination was detected, additional analysis should be conducted to define and characterize the contaminants.
3. Mineral Spirits Disposal Area	1960s to 1986	Release to soil occurred each time wastes were discharged.	Continue with directives set forth in Agreed Order.
4. Satellite Accumulation Areas Areas	1980 to Present	None	No further action for this unit.
5. Hazardous Waste Storage Area	1988 to Present	None	No further action for this unit.
6. Oil Storage Area	1987 to Present	None	No further action for this unit.
7. Electrostatic Precipitators	1976 to Present	None	No further action for this unit.

TABLE 3 (continued)

SWMU AND AOC SUMMARY

	AOC	Dates of Operation	Evidence of Release	Recommended Further Action
1.	Two 12,000-Gallon Gasoline USTs	Unknown to 1986	An estimated release of 3,000 gallons of gasoline was detected on August 11, 1986.	Analyze soil and groundwater to define and characterize contaminants. If necessary, remediate the area.

REFERENCES

ATEC Associates, Inc. (ATEC), 1986. Leaking Underground Storage Tank Investigation: Ball Corporation, Muncie, Indiana. Submitted October 7.

ATEC, 1988. Final report for remediation of fuel oil contaminated soil, March 16.

Ball Corporation (Ball), 1980a. Notification of Hazardous Waste Activity, August 18.

Ball, 1980b. Part A permit application, November 18.

Federal Emergency Management Agency (FEMA), 1987. National Flood Insurance Program - Flood Rate Insurance Map: City of Muncie, Delaware County. Community-panel number 180053 0007 C. Map revised December 3.

Indiana American Water Company (IAWC), 1992. Telephone conversation between Alan Supple, RAI and an IAWC employee, February 4.

Indiana Department of Environmental Management (IDEM), 1986a. RCRA inspection, August 12.

IDEM, 1986b. Correspondence from Skip Powers, IDEM to Kent Bickell, Ball, acknowledging gasoline release, September 4.

IDEM, 1987. Complaint, Proposed Final Order, and Notice for Administrative Review, filed by IDEM against Ball, May 7.

IDEM, 1988. RCRA inspection, July 26.

IDEM, 1989. Agreed Order, November 26.

IDEM, 1990. RCRA inspection, September 19.

IDEM, 1991. Correspondence from Timothy Method, IDEM to Richard Cole, Ball, Certifying Closure, October 3.

Indiana Geological Survey (IGS), 1987. Bedrock Geologic Map of Indiana. Indiana Department of Natural Resources Miscellaneous Map 48.

Ontario Environmental, Inc. (Ontario), 1992. Draft report on 1991 closure of USTs, February, 17.

U.S. Department of Agriculture (USDA), 1972. Soil Survey of Delaware County, Indiana. Soil Conservation Service, Washington, D.C.

U.S. Department of Commerce (USDC), 1967. Climatological Summary: Muncie, Indiana.

USDC, 1968. Climatic Atlas of the United States. U.S. Government Printing Office, Washington, D.C.

U.S. Geological Survey (USGS), 1981. 7.5-minute topographic series: Muncie East Quadrangle, Indiana.

ATTACHMENT A

EPA PRELIMINARY ASSESSMENT FORM 2070-12

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IN	IND 000 810 713

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Ball Corporation	1509 South Macedonia Avenue				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Muncie	IN	47302	Delaware		

09 COORDINATES: LATITUDE	LONGITUDE
40 10 30.N	085 20 15.W

10 DIRECTIONS TO SITE *(Starting from nearest public road)*

State Road 32 to Muncie, 32 turns into Kilgore. East on Jackson to Ohio, south to Burlington, West on Macedonia.

III. RESPONSIBLE PARTIES

01 OWNER *(If known)*	02 STREET *(Business, mailing residential)*		
Ball Corporation	345 South High Street		
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Muncie	IN	47035	(317) 747-6100
07 OPERATOR *(If known and different from owner)*	08 STREET *(Business, mailing, residential)*		
Ball Corporation	1509 South Macedonia Avenue		
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Muncie	IN	47302	(317) 747-6100

13 TYPE OF OWNERSHIP *(Check one)*

■ A. PRIVATE ☐ B. FEDERAL: _____ *(Agency name)* ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER _____ *(Specify)* ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE *(Check all that apply)*

■ A. RCRA 3010 DATE RECEIVED: 08 / 18 / 80 (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE *(CERCLA 103 c)* DATE RECEIVED: / / (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

■ YES DATE 01 / 21 / 92
☐ NO

BY *(Check all that apply)*

☐ A. EPA ■ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ *(Specify)*

CONTRACTOR NAME(S): Resource Applications, Inc.

02 SITE STATUS *(Check one)*

■ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION

1888 (BEGINNING YEAR) | present (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Mineral spirits, trichloroethylene, gasoline, and numerous laboratory chemicals

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

The soil is contaminated with gasoline and mineral spirits. There is a high probability that the contaminants entered the ground water.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION *(Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents.)*

☐ A. HIGH *(Inspection required promptly)* ■ B. MEDIUM *(Inspection required)* ☐ C. LOW *(Inspect on time-available basis)* ☐ D. NONE *(No further action needed; complete current disposition form)*

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF *(Agency/Organization)*			03 TELEPHONE NUMBER
Kevin Pierard	U.S. EPA Region 5			(312) 886-4448
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Michael W. Gorman		Resource Applications, Inc.	(312) 332-2230	01 / 22 / 92 (MONTH DAY YEAR)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IN	IND 000 810 713

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ *(Specify)*
- ☐ E. SLURRY
- ■ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TON _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS *(Check all that apply)*

- ■ A. TOXIC
- ■ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ■ G. FLAMMABLE
- ■ H. IGNITABLE
- ■ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ■ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	Unknown		Land disposal from 1960s to 1986.
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		Contaminants detected during closure.

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	Trichloroethane	79-00-5	Drum	Unknown	
	Trichloroethylene	79-01-6	Drum	Unknown	
	Arsenic	7440-38-2	Drum	Unknown	
	Barium	7440-39-3	Drum	Unknown	
	Cadmium	7440-43-9	Drum	Unknown	
	Methyl Ethyl Ketone	78-93-3	Drum	Unknown	
	Methyl Isobutyl Ketone	108-10-1	Drum	Unknown	
	Mineral Spirits	8030-30-6	Land disposal/drum	Unknown	
	Acetone	67-64-1	Drum	Unknown	
	Toluene	108-88-3	Drum	Unknown	
	Methylene Chloride	75-09-2	Drum	Unknown	
	Toluene Diisocyanate	584-84-9	Drum	Unknown	
	Mercury	7439-97-6	Drum	Unknown	
	Methanol	67-56-1	Drum	Unknown	
	Asbestos	1332-21-4	Unknown	Unknown	
	PCBs	1336-36-3	Unknown	Unknown	

V. FEEDSTOCKS *(See Appendix for CAS Numbers)*

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION *(Cite specific references; e.g., state files, sample analysis, reports)*

Ball, 1980b. Part A permit application

IDEM, 1986a. RCRA inspection

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE: IN	02 SITE NUMBER: IND 000 810 713

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ■ A. GROUNDWATER CONTAMINATION — 02 □ OBSERVED (DATE: _____) — ■ POTENTIAL — □ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Mineral spirits were discharged on unlined soil from 1960s to 1986. A release of 3,000 gallons of gasoline occurred on August 11, 1986. There is a high probability that both contaminants entered the ground water.

01 □ B. SURFACE WATER CONTAMINATION — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — □ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

No surface water contamination was detected.

01 ■ C. CONTAMINATION OF AIR — 02 □ OBSERVED (DATE: _____) — ■ POTENTIAL — □ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _ — 04 NARRATIVE DESCRIPTION

There is a high probability that mineral spirits wastes volatilized upon discharge to the soil.

01 □ D. FIRE/EXPLOSIVE CONDITIONS — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — □ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _ — 04 NARRATIVE DESCRIPTION

No fire or explosive conditions were detected.

01 □ E. DIRECT CONTACT — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — □ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

No direct contact was identified.

01 ■ F. CONTAMINATION OF SOIL — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — ■ ALLEGED

03 AREA POTENTIALLY AFFECTED: _____ (Acres) — 04 NARRATIVE DESCRIPTION

Mineral spirits were discharged on unlined soil from 1960s to 1986. A release of 3,000 gallons of gasoline occurred on August 11, 1986.

01 □ G. DRINKING WATER CONTAMINATION — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — □ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

No drinking water contamination was detected.

01 □ H. WORKER EXPOSURE/INJURY — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — □ ALLEGED

03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None detected.

01 □ I. POPULATION EXPOSURE/INJURY — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — □ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _ — 04 NARRATIVE DESCRIPTION

The facility has TV monitoring, chain-link fencing, and 24-hour security guards. Potential for population exposure is low.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IN	IND 000 810 713

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ■ J. DAMAGE TO FLORA — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — ■ ALLEGED

04 NARRATIVE DESCRIPTION

The grass is dead in the area where mineral spirits were discharged.

01 □ K. DAMAGE TO FAUNA — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — □ ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

None detected.

01 □ L. CONTAMINATION OF FOOD CHAIN — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — □ ALLEGED

04 NARRATIVE DESCRIPTION

None detected.

01 ■ M. UNSTABLE CONTAINMENT OF WASTES — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — □ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

The mineral spirits were discharged directly onto unlined soil. Several containers were observed leaking when Building 48 was operating.

01 □ N. DAMAGE TO OFF-SITE PROPERTY — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — □ ALLEGED

04 NARRATIVE DESCRIPTION

None detected.

01 ■ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPS □ OBSERVED (DATE: _____) — ■ POTENTIAL — □ ALLEGED

04 NARRATIVE DESCRIPTION

There is a potential that wastes from Building 48 entered the sewer from a July 24, 1988 water pipe rupture.

01 ■ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 □ OBSERVED (DATE: _____) — □ POTENTIAL — ■ ALLEGED

04 NARRATIVE DESCRIPTION

Mineral spirits was illegally dumped from the 1960s to 1986.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

During closure, soil contamination was detected around Buildings 48 and 56.

III. TOTAL POPULATION POTENTIALLY AFFECTED: __

IV. COMMENTS

V. SOURCES OF INFORMATION *(Cite specific references; e.g., state files, sample analysis, reports)*

DEM, 1986a. RCRA inspection, August 12.

ATTACHMENT B

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

VISUAL SITE INSPECTION SUMMARY

Ball Corporation
Muncie, Indiana
IND 000 810 713

Date:	January 21, 1992
Facility Representatives:	Richard Cole, Ball Corp. Linda Bobo, Ball Corp. Harry Fowler, Ball Corp. Robert Longfellow, Ball Corp.
Inspection Team:	Alan Supple, Resource Applications, Inc. Mike Gorman, Resource Applications, Inc. Keith Antell, Indiana Department of Environmental Management
Photographer:	Alan Supple, RAI
Weather Conditions:	Sunny, breezy, temperature 40°F
Summary of Activities:	The visual site inspection began on January 21, 1992 at 8:00 a.m. RAI representatives met with Ball representatives and explained the purpose of the VSI. Ball representatives explained the facility's operating procedures and waste management practices. Ball representatives then escorted RAI on a walk through inspection of the facility. The exterior of the facility was covered with snow; therefore, evidence of release could no be determined. The VSI concluded with a meeting and the inspection team left the facility at 3:00 p.m.

Photograph No.1 Location: SWMU 1
Orientation: South Date: January 21, 1992.
Description: This is the former location of Building 56.

Photograph No.2 Location: SWMU 2
Orientation: South Date: January 21, 1992.
Description: This is the interior of Building 48. Note the cracks in the floor.

Photograph No.3 Location: SWMU 3
Orientation: North Date: January 21, 1992
Description: This is the area, south of Building 30, where mineral spirits were discharged.

Photograph No.4 Location: SWMU 4
Orientation: North Date: January 21, 1992.
Description: The wastes in this lab-pack contain nonchlorinated solvents.

Photograph No.5 Location: SWMU 4
Orientation: East Date: January 21, 1992.
Description: The wastes in this lab-pack contain chlorinated solvents.

Photograph No.6 Location: SWMU 4
Orientation: Northeast Date: January 21, 1992.
Description: These are hazardous wastes generated in the laboratory.

Photograph No.7 Location: SWMU 4
Orientation: North Date: January 21, 1992
Description: The material contained in the glass bottle is laboratory wastes.

Photograph No.8 Location: SWMU 4
Orientation: Northwest Date: January 21, 1992.
Description: This is a satellite drum of mineral spirits generated from the painting operations.

Photograph No.9 Location: SWMU 5
Orientation: Southwest Date: January 21, 1992.
Description: The interior view of Building 67, used for less than 90 day storage.

Photograph No.10 Location: SWMU 6
Orientation: Northeast Date: January 21, 1992.
Description: These are 5-gallon buckets and 55-gallon drums of waste oil.

Photograph No.11 Location: SWMU 7
Orientation: West Date: January 21, 1992.
Description: This is the tank used to collect plasticizer particulates and water.

Photograph No.12 Location: SWMU 6 and AOC 1
Orientation: South Date: January 21, 1992.
Description: This is Building 22 and the drums contain waste oil. The area underneath the drums is where the gasoline release occurred.

ATTACHMENT C

VISUAL SITE INSPECTION FIELD NOTES

Ball Corp. 1/21/92
Sunny, Breezy 40° +
RAI - M. Gorman
A. Supple
IDEM K. Autell
Ball - Richard Cole
Linda Bobo
Bob Longstellow
Harry Foster

Ball manufactures canning lids & conducts R&D on canning products

Facility began operations in 1888
1888-1962 - Mfg. Glass jars
1962 - present mfg.
R&D work
Plastic containers
Pre fab buildings
Electronic guages

Mfg. prefab buildings under name Pantek (1976-77)
Ball Bld. systems 1979-81

1987 Ball-Incon incorp. took over electronic guages
1990 - Plastics Packaging Corp. ~~Incorporated~~ & took over plastics operations

Security - Fence - (Chain-link)
TV Monitoring
24-Hour Guards
Closest school is four blocks Northeast
The city & facility get H_2O from White River
2 industrial wells are located on site

Macedonia St. facility is 77 acres / 421 employees

plastics operation & prefab buildings pretty similar

Plastics pellets, purchased heated & poured into molds. pre-fab had stones added.

Glass operations
Mixture of silica sand, soda ash, limestone, selenium. Material is heated, poured into Mold, Cooled & baked for shipment

Plastics & prefab ufs did not generate wastes. material was reprocessed

Glass operations generated "cullett" = broken glass
wastes were landfilled.

Electronic guages were just assembly of parts
Scraps & solder waste were placed in garbage

Used to conduct degreasing operations 1971-87
Ball-Incon took over
Used TCA & TCE, wastes were stored in SWMUs 42
Building 56 & 48
Building 56 - 1980-82 - 1st storage area
Building 48 - 82 - 88 larger than 56.
Both closed in 1988 officially in 1991
Now store wastes for less than 90 days
Wastes are Lab (R&D) & Paint wastes

Lab wastes- Numerous solvents, primarily MEK & MIR

Managed in SATEllite Accumulation Areas then Moved to less than 90-day storage

Mineral Spirits used in painting. to clean brushes, rollers, & spray lines. Collected in 55-gal drum & Transferred to Storage

Mineral Spirits used as Parts Cleaner 1960's to 1986 discharged Outside on ground South of building 30

Currently use Safety Kleen

Labs are used for R&D on Containers, Coatings, Integrity tests.

Hydraulic & motor oil is stored in maint. Std. in 5-gal buckets & 55-gal drums
Johnson Petroleum removes oil

USTs - Gasoline
2 Fuel Oil
2 Lube oil
1 Naptha

Gasoline - Closed in 1986
The rest were closed in 12/91

Need to get reports on removals

Canning lids operations
Facily gets Tin sheets
From other Ball facilities
Cut the tin into 2 parts
The top & securing rung.
Top goes to plastisol
operation

Plastisol - polyvinyl chloride
resin, pigments, colors.
All mixed together &
placed on outer rim of
top. to Form gasket

Plasticizers particulates
are vacuumed into
electrostatic precipitators
& collected with H_2O
in Tank. Facility will
supply air documents

Gasoline Release - in 1986
Facility can't remember
if it was remediated
Will supply report.

Agreed Order has been
signed concerning
Mineral spirits releases

Facility has removed
PCBs on two occassions &
Asbestos on
1986 - a PCB transformer
from Building 21
1989 - 50 small capacitors
1987 - Asbestos Insulation
Bld. 21
1989 - Asb. roofing Bld. 25
1/92 - Asb. flooring Bld. 24
1/92 - Bld. 48 is scheduled
to have Asb. roofing
removed.

Photos

1) North - Laboratory
2) N - " "
3) E - Lab Satellite
4) NE - Lab " "
5) N " "
6) E - Naphtha UST
7) SW - < 90 day storage area
8) S - Oil Storge
9) SE - " "
10) SE - Satellite drum of Mineral Spirits
11) N - Formed Lube oil UST
12) N - Mineral spirits disposal area
13) W - Precipitator Tank of H_2O pumped to sewer No permit
14) NE - 18,000 Gal Fuel Oil UST
15) S - 25,000 " "
16) S - Building 48
17) W - " "
18) S - Foun Bld. 56
19) - Above ground fuel oil TANK area remediated

ATTACHMENT D

ATEC REPORT ON GASOLINE RELEASE

LEAKING UNDERGROUND STORAGE TANK INVESTIGATION
BALL CORPORATION
MUNCIE, INDIANA
ATEC PROJECT NUMBER 21-63261

Prepared For:

BALL CORPORATION
1509 SOUTH MACEDONIA AVENUE
MUNCIE, IN 47302

TABLE OF CONTENTS

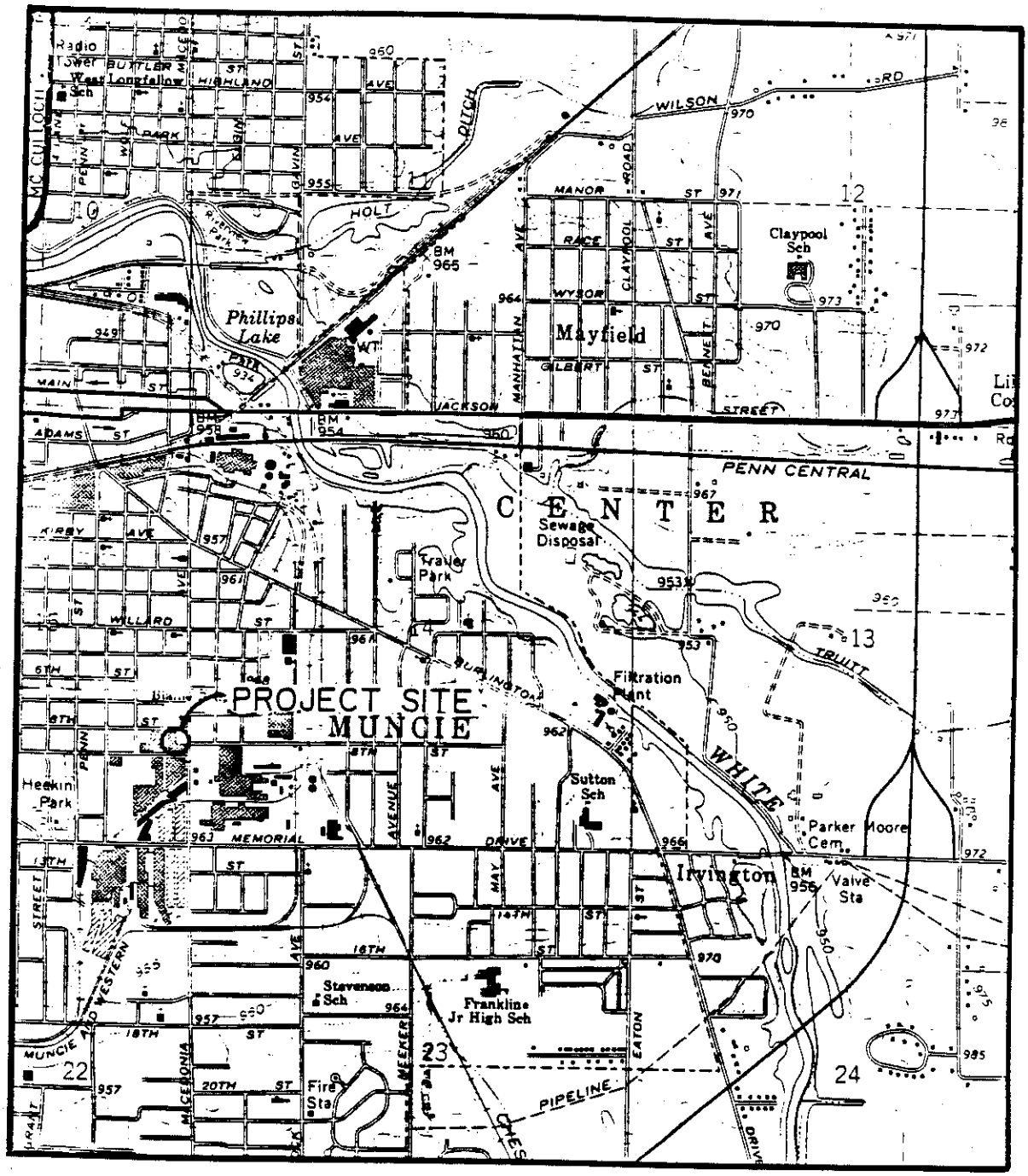
LEAKING UNDERGROUND STORAGE TANK INVESTIGATION

Ball Corporation
Muncie, Indiana
ATEC Project Number 21-63261

1.0 INTRODUCTION

ATEC Environmental Services, Inc. (ATEC) was retained by Ball Corporation (Ball) to define the extent of an underground storage tank leak at its 8th Street Garage, and, once defined, to recommend remedial actions. The plant site is located in southeast Muncie, Indiana as shown on the vicinity map labeled as Figure 1. Ball had previously determined that at least one of two 12,000 gallon underground gasoline storage tanks, located under the building floor of a maintenance garage at the site, was losing product, and had contracted for installation of an epoxy lining of the tank in an attempt to resolve the problem. Insufficient information existed to determine the amount of product lost.

ATEC was contacted by Ball when product odors were detected in the Ball facility after the tank had been placed back into service. ATEC defined the extent of the contamination through the use of subsurface borings and, once defined, established a product recovery system to extract the free product from the soil. This report documents the work performed by ATEC during this project and discusses ATEC's involvement in the ongoing product recovery activities.



VICINITY MAP
8TH STREET GARAGE
BALL CORPORATION
MUNCIE, IN

PROJECT NO.	21-63261
SCALE	1" = 2000'
FIGURE NO.	1

ATEC

2.0 SITE CONDITIONS

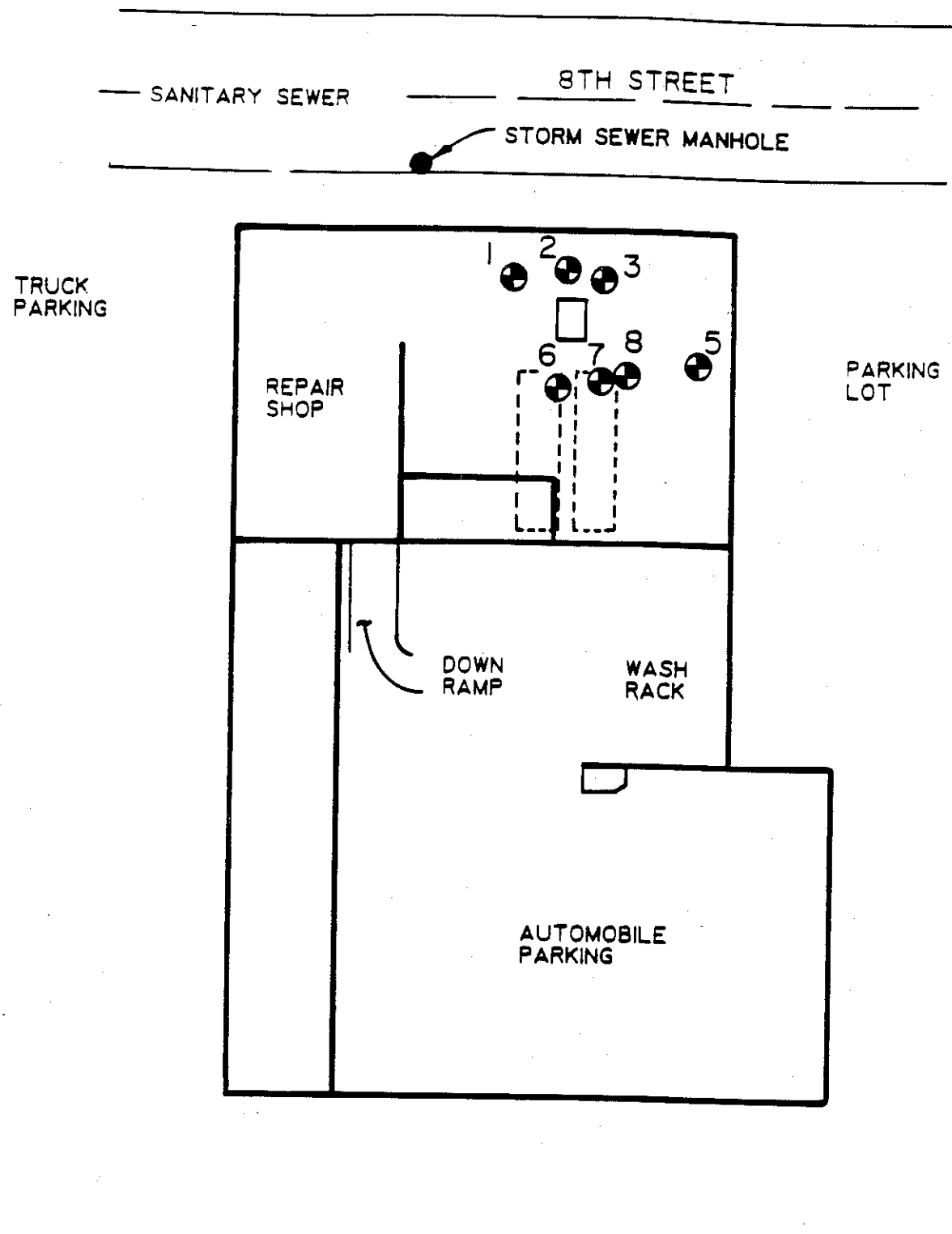
2.1 Facility Description

Ball Corporation maintains a large manufacturing facility located approximately one mile southeast of downtown Muncie, Indiana. Two 12,000 gallon underground gasoline storage tanks are located beneath the 8th Street Garage, as shown in Figure 2. The tanks are contained within concrete retaining walls constructed within the natural clayey soils found at the site. The backfill placed around the tanks consists of sandy and silty clays. A parking garage is located directly south of the maintenance garage and east-west trending storm and sanitary sewers are located under 8th Street directly north of the maintenance garage.

2.2 Geology

The surface topography is level to gently sloping to the north. The surface drainage in the vicinity of the site is towards the north to White River.

The site is located in the Indiana physiographic division known as the Tipton Till plain. The Tipton Till plain is typified by a nearly flat to gently rolling glacial plain with generally southwest trending drainage. Most of the local relief is due to stream incisement. Surficial soils are developed in glacial till of varying thickness, with discontinuous lenses of stratified sand and gravel. The glacial till at the



BORING PLAN - PHASE I
LEAKING UNDERGROUND STORAGE TANK
BALL CORPORATION
MUNCIE, IN

PROJECT NO.	21-63261
SCALE	1" = 30'
FIGURE NO.	2

ATEC

Ball site is thin and shallow and overlies Silurian and Devonian-Age limestone, dolomite and shale. According to published reports, it is probable that karst features were at least moderately well developed in the limestone found under the till plain prior to its burial by glacial materials. The primary glacial material found above the bedrock in the Muncie area is drift. Drift is defined as any material transported and deposited by a glacier either directly from the ice or from glacial meltwaters.

Soils encountered at the Ball facility are comprised of clay fill underlain by brown to gray silty clays and brown silty sand and sandy clay. These materials ranged from between 10 and 15 ft in thickness across the site and were located directly above limestone bedrock.

2.3 Hydrogeology

Unconsolidated sand and gravel lenses interbedded in drift, and the bedrock make up the primary aquifers in the Muncie area. Regional groundwater flow in the unconsolidated and bedrock aquifers is to the north toward the White River. Variations in the regional flow direction can occur due to localized alterations in hydrogeologic conditions created by factors such as large scale pumpage and excavation work.

At the Ball facility the first water bearing zone is on a 5 ft thick sand and gravel seam encountered 10 ft below the land surface. This seam does probably not qualify as an aquifer. Groundwater flow direction within this material is not reported in the literature but water level information obtained during this investigation indicates flow to the north toward White River.

Published data indicate that the confined sand and gravel aquifers associated with the drift in the Muncie area have a highly variable hydraulic conductivity (24 to 1, 633 ft/day) with an average of 433 ft/day. Multiplying the average conductivity value by the maximum demonstrated thickness of 5 ft yields an average transmissivity for the sand and gravel materials at the Ball site of 2,200 sq. ft per day.

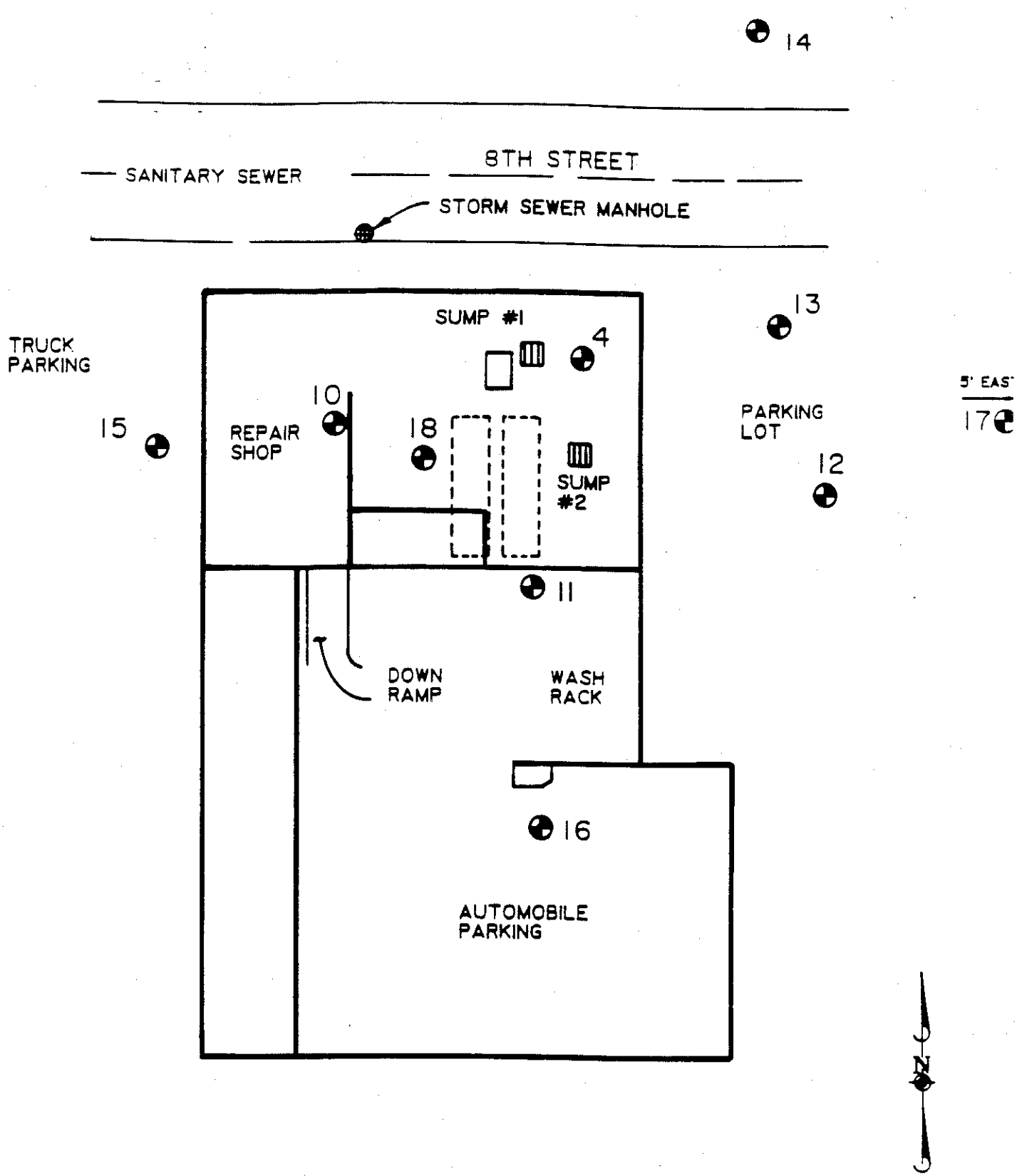
The carbonate bedrock, which appears to be at a shallow depth at the Ball facility, has the capability of providing significant quantities of groundwater to wells. The transmissivity of this material averages 1,000 sq. ft. per day, but tends to be highly variable. This variability generally results from the intermittent development of secondary permeability, in the form of fractures, joints and solutional channels in these carbonate rocks.

3.0 FIELD INVESTIGATION

The project has evolved into three interconnected phases of work. Phase I of the field investigation consisted of the drilling of seven test borings inside of the garage area near the suspected leaking underground tank (Figure 2) to determine if product was present in the subsurface at these locations. Free product was discovered in these borings so the scope of the investigation was expanded to include a second phase designed to delineate the extent of the free product.

An additional eleven borings were drilled during Phase II and five additional borings were drilled during Phase III to define the extent of product in the subsurface. The boring and sump locations from Phase II are shown in Figure 3. Also, during Phase II the underground fuel tanks were both entered for cleaning and inspection. The epoxy lining on the east tank (unleaded) was inspected and appeared to be in good condition. The west (regular) tank was found to be severely degraded and contained several holes.

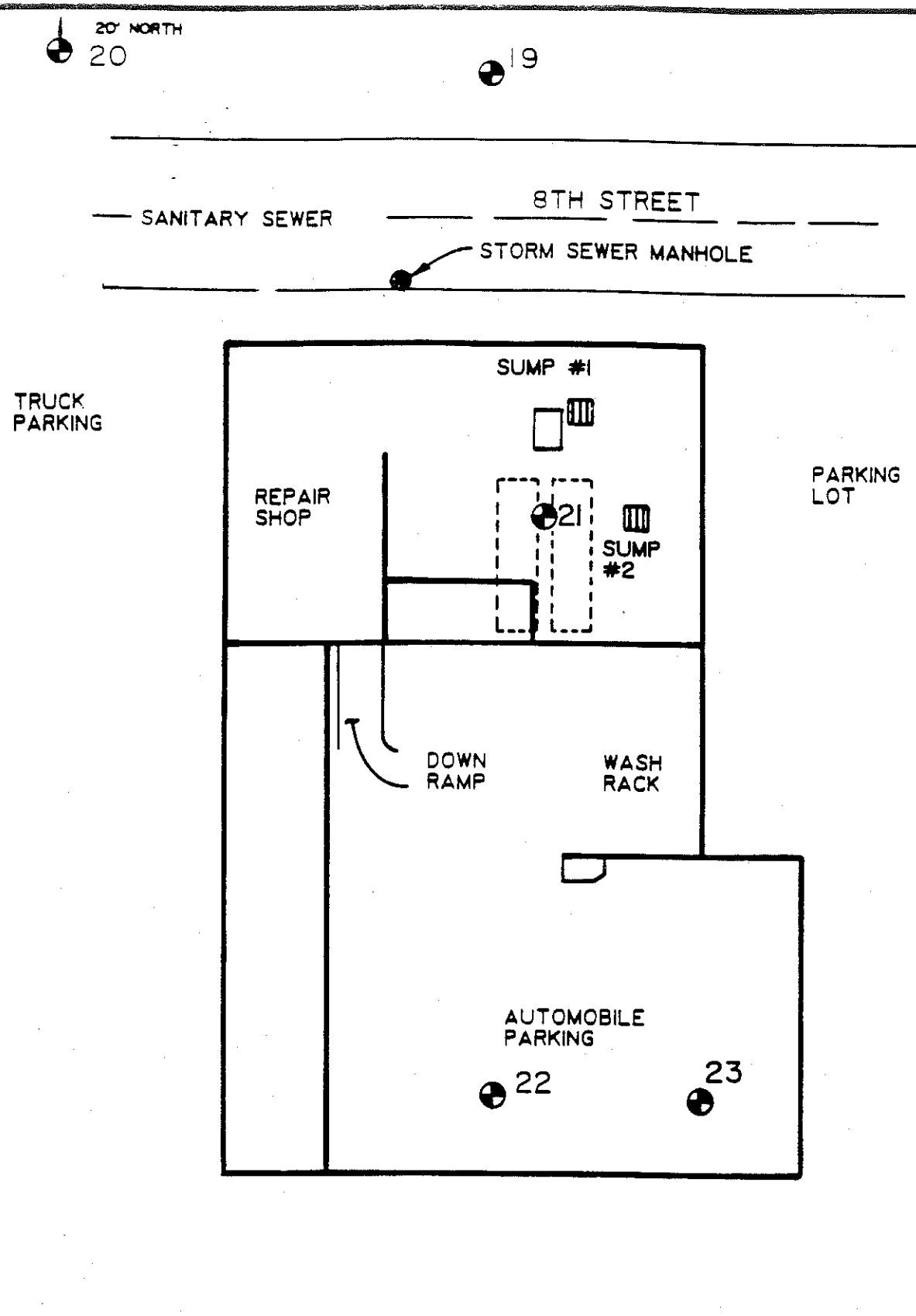
Three observation wells were installed during Phase III as shown in Figure 4. The wells consist of 10 ft of 2 in. I.D. Schedule 40 PVC with 5 ft of 0.10 factory slotted screen. One well (B-21) was installed directly between the two underground tanks to monitor the amount of product present at this location. Borings B-22 and B-23 were installed in the parking



BORING PLAN - PHASE II
LEAKING UNDERGROUND STORAGE TANK
BALL CORPORATION
MUNCIE, IN

PROJECT NO.	21-63261
SCALE	1" = 30'
FIGURE NO.	3

ATEC



BORING PLAN - PHASE III
LEAKING UNDERGROUND STORAGE TANK
BALL CORPORATION
MUNCIE, IN

PROJECT NO.	21-6326I
SCALE	1" = 30'
FIGURE NO.	4

ATEC

garage south of the tank pit to monitor the background water quality upgradient of the site. Observation well construction diagrams are contained in Appendix A.

All borings inside the garage were drilled utilizing a Mobil Drill Minuteman model drill rig, which advanced 4.5 in. O.D. hollow stem augers through the soil. Samples of the soils were collected directly from the auger flights, and through the center of the augers using a small screw auger sampler. The test borings outside the garage building were drilled using 3-3/8 in. I.D. hollow stem augers, with samples collected by driving a 2 in. O.D. split spoon sampler below the augers at the desired sampling intervals.

The auger cuttings and samples were classified by an ATEC geologist in the field using the Unified Soil Classification System. Boring logs depicting the subsurface conditions at each borehole are provided in Appendix B. Letters in parenthesis which follow the soil descriptions refer to the Unified Soil Classification System. Total combustible vapors (TCV) emitted from the auger cuttings and collected soil samples were monitoring with a Gastechtor Hydrocarbon Survey Model 1238 Gas Indicator, calibrated for hexane, with the results recorded in parts per million (ppm) on the boring logs.

4.0 FINDINGS

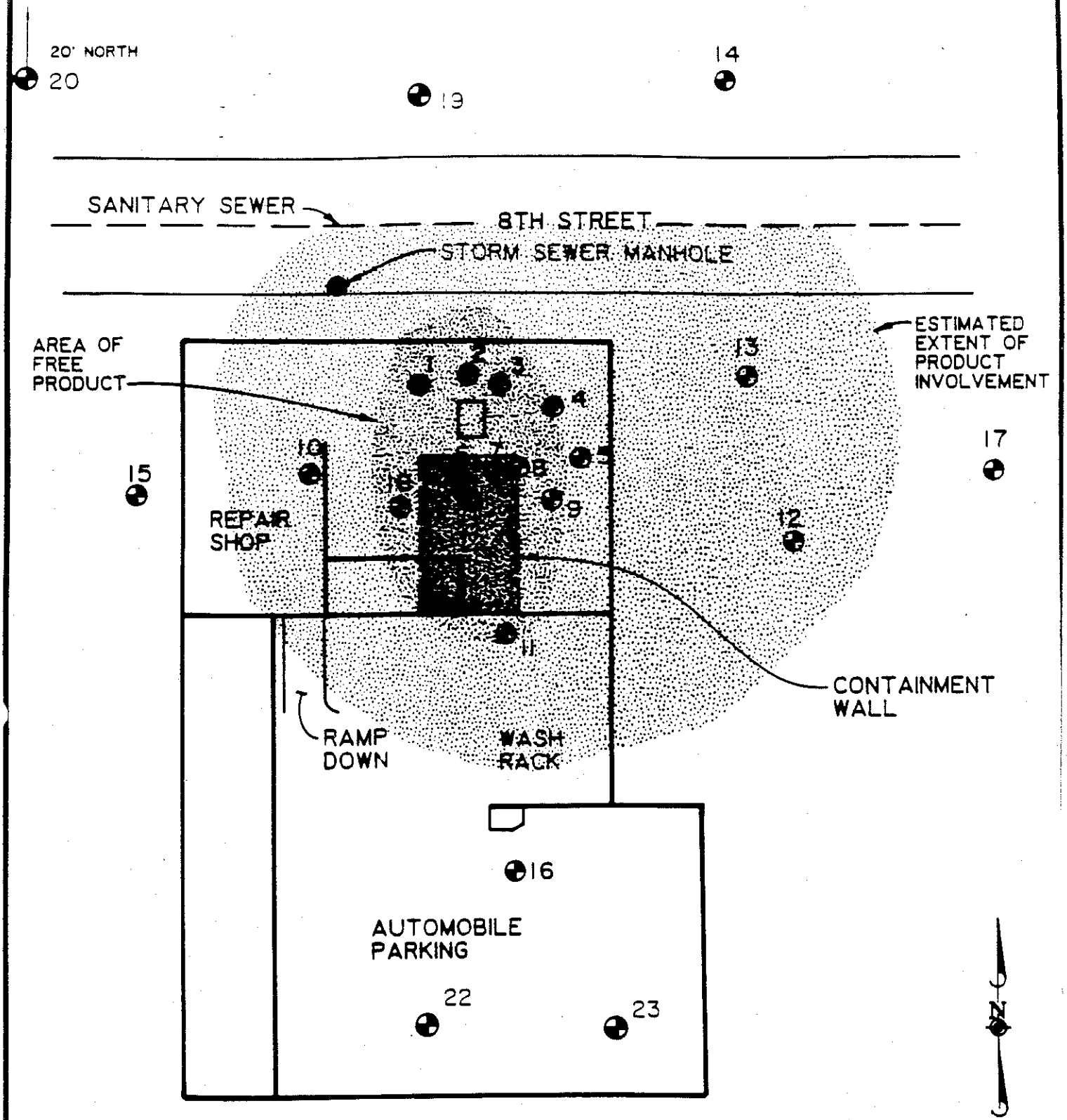
4.1 Soils

The borings encountered varying thicknesses of fill material within the upper 7 ft of soil. The fill material consisted of loose clayey and silty sands to silty and sandy clays with varying amounts of gravel, cinders and brick. Boring B-4 encountered an obstruction at 2.5 ft and was terminated. Borings B-6 and B-7 encountered the northern ends of underground tanks at 3 ft and thus were also terminated. Boring B-21 was drilled between the two tanks and was terminated at 10 ft within the tank pit fill materials. All of the remaining borings encountered soft to hard silty clay (CL), sandy clay (CL) or sandy silty clay (CL) below the fill to the total depths drilled. In addition, Borings B-1, B-2, B-3 and B-14, encountered a wet silty sand (SM) or clayey sand (SC) within three feet of terminating upon the limestone bedrock. Boring B-19 also penetrated the clayey sand (SC) just before being halted at 25 ft without encountering the bedrock. Borings B-5, B-8, B-12,B-19 and B-20 encountered wet sand seams from 7 to 10 ft. All of the borings not terminated by obstructions, except for B-19, B-20, B-22 and B-23, encountered apparent limestone bedrock between 7.5 and 13.0 ft. Boring B-19 was extended 25 ft without encountering bedrock and B-20, B-22 and B-23 did not encounter bedrock within the completed depth of 10.0 ft. See Appendix B for complete boring logs.

4.2 Product Saturation

Total combustible vapors (TCV) emitted from soil samples and auger cuttings were monitored in the field with the Gastechtor. The total TCV levels observed are recorded in parts per million (ppm) on the boring logs found in Appendix B. TCVs in excess of 500 ppm were recorded in the auger cuttings from the base of Borings B-1 through B-3 and B-5 through B-10. TCVs emitted from the soil monitored at Borings B-4, B-11 and B-18 ranged from 25 to 350 ppm. In all of these cases soils were encountered with more than sufficient product saturation to create elevated TCV levels within the garage. The remaining borings, B-12 through B-17, revealed low TCV levels ranging from not detectable (ND) to 40 ppm. In all borings with significant TCV emissions, the majority of discovered product was contained within the silty sand (SM) or clayey sand (SC) layers.

Based upon the TCV levels recorded during the drilling of the borings, a product plume has been defined. The plume, as delineated in Figure 5, is drawn to incorporate all of the product saturated soil contained as a results of the spill. Based upon the size and average thickness of the product plume, it is estimated that approximately 10,000 cu. ft of product saturated sandy soils, and approximately 25,000 cu. ft of vapor and product saturated clay exists associated with this spill. Based upon an estimate of the hydrogeologic properties of the



PLUME LOCATION
LEAKING UNDERGROUND STORAGE TANK
BALL CORPORATION
MUNCIE, IN

PROJECT NO.	21-63261
SCALE	1" = 30'
FIGURE NO.	5

ATEC

saturated sand materials, approximately 3000 gallons of product are potentially contained in the subsurface.

4.3 Groundwater

Free water was encountered in all of the borings, except B-4, B-6 and B-7, and ranged from within 3.0 to 14.0 ft of the ground surface. The groundwater level measurements are recorded on the boring logs included in Appendix B. Measurements of product thickness in the borings were made using a clear, ball-valve hydrocarbon sampler, and are summarized below in Table 1.

Table 1

Summary of Product Thickness Measurements
August 13, 1986

Boring No.	Product Thickness, in.
1	Film
2	1/16
3	2
5	Film
8	1/16
9	2-3/4
10	1/16
11	1/16
12	None
13	Film
14	None
15	None
16	None
17	None
18	1/4
19	None
20	None
21	Film (at drilling)
22	None

Observation well B-21, installed between the two underground tanks during the third phase of drilling has revealed up to 22 in. of free product since the level reading obtained on August 13.

Based on the amount of free product found in Borings B-3 and B-9 a recovery system was designed and installed.

5.0 RECOVERY OPERATIONS

5.1 Product Recovery Sumps

At the completion of the first two drilling phases, two product recovery sumps were installed at the boring locations that demonstrated the greatest amount of free product. During sump installation, a 4 ft by 4 ft area was excavated to bedrock (approximately 9 ft) and a 2 ft diameter, slotted, corrugated metal pipe (CMP) was placed in the excavation. The surrounding annular space was filled with crushed stone and a manhole cover was cemented into place over the CMP to complete the installation.

The excavated soils were placed in a ventable, plastic-lined, dumpster. Product vapors were vented from the soil so that it will not ignite at a temperature of the soil below 140^{o}F in order to change its classification from hazardous waste to special waste. The locating of a landfill willing to accept the generated waste soils, obtaining appropriate disposal

permits, and the final disposal of the soil was handled by Ball. The garage was vented at all times during construction to prevent the build-up of excessive combustible vapors.

5.2 Product Recovery System

A product recovery system was installed in the downgradient, No. 1, sump as located on Figure 3. The recovery system consists of two pneumatic pumps connected to a control box that provides automatic operation. One pump is used to draw down the water in the sump causing the surrounding water and product to flow toward it for recovery. The drawdown in the sump is maintained within a defined range by the adjustable automatic control box. The water is taken up by the system from the bottom of the sump and discharged to the upgradient sump (No. 2).

The second pneumatic pump is connected to a product skimmer installed within a section of 4 in. I.D. schedule 40 slotted PVC well screen. The skimmer device is designed to skim product only from the sump. The buoyancy of the skimmer is calculated to allow it to float at the product/water interface and to draw only floating product. The withdrawn product is discharged by the pump into a sealed, vented storage container. The rate of product withdrawal is controlled to match the rate at which it is introduced into the sump by an adjustable timer within the control box which controls the cycling of the pumps

operation. The entire system is sealed to prevent the escape of potentially hazardous vapors. Product recovery operations from the north sump has, to-date, recovered approximately 300 gallons of product.

6.0 RECOMMENDATIONS

It is recommended that an additional product recovery well be established at location B-21 where up to 22 in. of product has been observed. It is further recommended that the product recovery efforts at the garage should continue until adequate assurance can be obtained that the maximum amount of product has been purged from the subsurface. Due to the lack of available specific information, it is very difficult to accurately estimate the amount of product in the subsurface. However it appears that potentially 3,000 gallons of product exist within the sandy soils. Based upon this value it is projected that recovery efforts will be required for a minimum of four to six months.

Due to the great potential for the development of explosive conditions from TCV accumulation from the sumps and the subsurface, the interior of the garage should be monitored for the next year on a weekly basis. If vapor accumulation attributable to migration from the subsurface occurs, it may become necessary to install a subsurface vapor recovery system and/or expose and vent the subsurface soils to alleviate the situation.

In summary, to protect against potential product generated problems, the following procedures should be followed.

Entrance to the tank area should be allowed only to authorized personnel.

Accumulation of gasoline vapors should be monitored constantly and the installation of ventilating fans may be necessary. The fans should be explosion-proof and controlled by an automatic hydrocarbon sensor system or by regular manual surveillance. In addition, the recovered product storage containers should be sealed or removed from the building to prevent further accumulation of vapors. All ignition sources should also be removed from the tank area.

The tanks should be abandoned and grouted in-place with a bentonite/cement or flyash/cement slurry. All product lines to the pumps should be cleaned and capped.

Any underground utility lines in the area should be sealed off above the floor or re-routed. The sewer lines should be cleaned and an impervious barrier placed between the contaminant plume and the sewer lines to prevent further discharge of gasoline into the sewers. In addition, all openings, cracks, etc., in the concrete floor should be sealed to prevent escape of vapors.

Ball Corporation should establish an emergency procedure should the situation worsen, including, the potential removal of all contaminated sub-soils in the vicinity of the tanks.

Recovery efforts should continue until the extent of product removal satisfies regulatory guidelines.

ATTACHMENT E

SOIL ANALYSIS RESULTS FOR BUILDING 56 (SWMU 1)

EVALUATION OF THE RESULTS OBTAINED FROM THE SUB-SURFACE SAMPLING CONDUCTED FOR THE PORTION OF BALL CORPORATION'S RCRA STORAGE FACILITY (IND 000 810 713) KNOWN AS FORMER BUILDING 56

May 31, 1991

I. Introduction

As specified by the IDEM-approved closure plan for Building 56, samples were taken of the soil beneath and around the former building at specified sites. The samples were analyzed in accordance with the criteria set forth in the closure plan. Re-analysis and additional analysis were conducted when mandated by the applicable provisions of the plan.

This work was performed by MAECORP, Inc., and their subcontractors, under their project designation #IN-A274. They have certified that the work was performed as specified. The results were transmitted to Ball Corporation in an Final Report dated April 23, 1991.

The data were evaluated to determine if any contamination was found to exist, and to determine the need for additional sampling to accurately define an extent of contamination per Section 3.6 of the plan.

II. Criteria

As specified by the closure plan, any sample yielding an analytical result that exceeded the established criterion for contamination would be reanalyzed to confirm the validity of the finding. Two analytical results exceeding the criterion for contamination are required for a sample to be designated as being positive.

As specified by the plan, analyses were performed on soil samples taken from the 24-42 inch and 54-60 inch levels. In instances where positive results were found for metals, samples were reanalyzed.

III. Overview of Results

The individual analyses are contained in MAECORP's Final Report, which is attached.

The analyses were negative at all levels at all sample locations for barium, cadmium, chromium, mercury, selenium, silver and all but one volatile organic compound.

Results defined by the closure plan as meeting the criteria for contamination were found at some levels and some locations for arsenic, trichloroethylene, and pH.

IV. Analysis and Discussion of Specific Findings

A. Arsenic

The positive results, in ppm, for arsenic are displayed below by location and level, along with the respective background average and the three standard deviation criterion for contamination:

Level	AVG	+3SD	HA-1	HA-2	HA-3	HA-4	HA-5
24-30	16.57	37.84	-	-	-	-	-
30-36	6.67	15.14	16	18	17	28	22
36-42	7.46	19.58	26	28	-	31	-
42-48	3.84	8.15	23	*	15	42	16
54-60	2.82	5.84	21	-	-	-	-

Level	AVG	+3SD	HA-6	HA-7	HA-8	HA-9	HA-10
24-30	16.57	37.84	-	-	-	-	-
30-36	6.67	15.14	-	-	-	36	28
36-42	7.46	19.58	-	-	-	-	-
42-48	3.84	8.15	-	12	14	-	16
54-60	2.82	5.84	*	-	8	-	-

- = negative results, * = not conducted, SD = standard deviation

Review of these data indicates that there is no pattern of contamination at the building 56 site. Borings with positive results are not necessarily adjacent. Borings that are adjacent do not necessarily have positive results at the same levels, and positive results within the same boring may appear at separated levels.

B. Trichloroethylene

The positive results, in ppm, for trichloroethylene are displayed below by location and level along with the criteria for contamination, the method detection limit:

Level	DL	HA-1	HA-2	HA-3	HA-4	HA-5
24-30	0.005	-	-	-	-	-
30-36	0.005	-	-	-	-	0.009
36-42	0.005	-	-	0.006	-	0.008
42-48	0.005	-	*	0.010	-	0.024
54-60	0.005	*	*	*	*	*

Level	DL	HA-6	HA-7	HA-8	HA-9	HA-10
24-30	0.005	-	-	-	-	-
30-36	0.005	-	-	-	-	-
36-42	0.005	-	-	-	-	-
42-48	0.005	-	-	-	-	-
54-60	0.005	*	*	*	*	*

- = negative results, * = not conducted, DL = detection limit

Again, review of these data indicates that there is no pattern of contamination at the building 56 site as borings with positive results are not necessarily adjacent. Additionally, results are only marginally above the criterion.

D. pH

The results obtained for pH that are positive according to the criteria for contamination are listed below. This information was generated despite concerns that applying standard deviation to logarithmic numbers might be meaningless.

Level	AVG	+3SD	HA-1	HA-2	HA-3	HA-4	HA-5
24-30	6.84	7.20	9.3	9.2	9.1	8.7	9.2
30-36	6.70	7.07	9.0	9.0	8.2	7.7	9.3
36-42	6.76	7.21	9.8	9.1	8.4	7.6	9.2
42-48	6.88	7.37	9.4	*	8.3	8.0	8.9

Level	AVG	+3SD	HA-6	HA-7	HA-8	HA-9	HA-10
24-30	6.84	7.20	9.3	8.4	8.7	8.9	9.3
30-36	6.70	7.07	9.5	10.6	8.7	8.6	9.2
36-42	6.76	7.21	9.7	9.1	9.2	9.2	8.8
42-48	6.88	7.37	9.6	9.7	9.2	8.2	8.9

SD = standard deviation

While positive results were obtained, review of this data does not indicate that any contamination has occurred. All values are within the range of pH values that are considered to be non-hazardous.

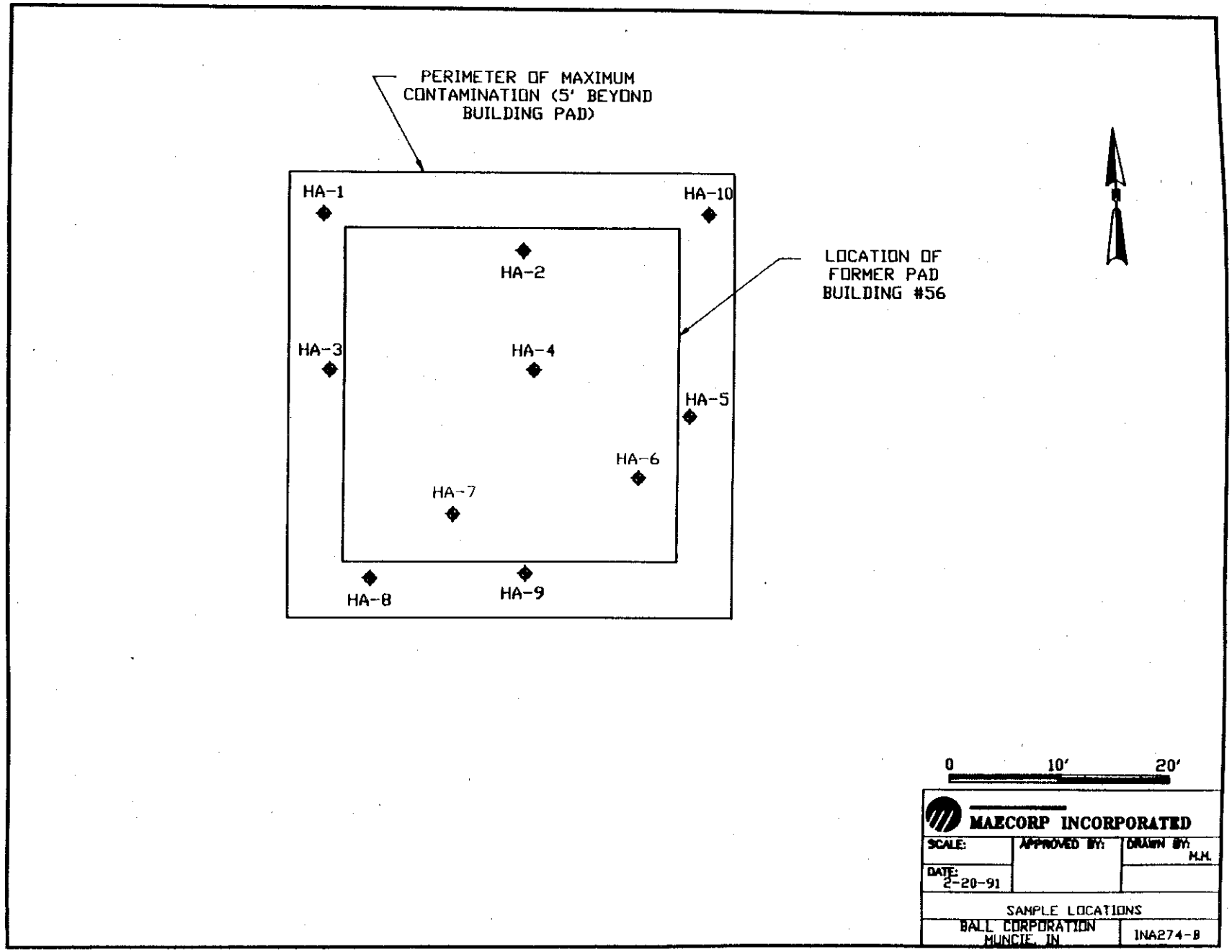
V. Conclusions

The positive results obtained for pH are not considered to be valid indications that any contamination has occurred, for the reasons so stated above. No additional actions are considered to be necessary.

The positive results obtained for arsenic and trichloroethylene, in our opinion, are not a result of any operation that was conducted within Building 56 when it was a waste storage facility, and are not sufficiently high to warrant any remediation. The industrial site on which Building 56 was located has been used for heavy industrial manufacturing for 104 years. A certain amount of low level oil and metal deposition into the soil would be expected to have occurred over this time period. The results are low, and do not show any pattern that would indicate contamination from a spill or leak.

VI. Facility Status

Ball requests that the status of the former Building 56 hazardous waste storage facility be changed to closed.


PERIMETER OF MAXIMUM CONTAMINATION (5' BEYOND BUILDING PAD)
LOCATION OF FORMER PAD BUILDING #56
HA-1
HA-2
HA-3
HA-4
HA-5
HA-6
HA-7
HA-8
HA-9
HA-10
0
10'
20'
MAECORP INCORPORATED
SCALE:
APPROVED BY:
DRAWN BY: M.M.
DATE: 2-20-91
SAMPLE LOCATIONS
BALL CORPORATION MUNCIE, IN
INA274-8

ATTACHMENT F

SOIL ANALYSIS RESULTS FOR BUILDING 48 (SWMU 2)

EVALUATION OF THE RESULTS OBTAINED FROM THE SUB-SURFACE SAMPLING CONDUCTED FOR THE PORTION OF BALL CORPORATION'S TREATMENT STORAGE AND DISPOSAL FACILITY (IND000810713) KNOWN AS BUILDING 48

December 13, 1990

I. Introduction

As specified by the IDEM-approved closure plan for Building 48, samples were taken of the soil beneath and around the building at specified sites. The samples were analyzed in accordance with the criteria set forth in the plan. Re-analysis and additional analysis were conducted when mandated by the applicable provisions of the plan.

This work was performed by MAECORP, Inc., and their sub-contractors, under their project designation #IN-A207. They have certified that the work was performed as specified. The results were transmitted to Ball Corporation in an Interim Report dated September 11, 1990.

The data were evaluated to determine if any contamination was found to exist, and to determine the need for additional sampling to accurately define any extent of contamination per Section 3.2 of the plan.

II. Criteria

As specified by the closure plan, any sample yielding an analytical result that exceeded the established criterion for contamination would be re-analyzed to confirm the validity of the finding. Two analytical results exceeding the criterion for contamination are required for a sample to be designated as being positive.

As specified by the plan, analyses were performed on samples taken from the top two feet of soil. The borings taken inside the building are identified as IB1 to IB7, those taken outside are OB1 to OB3. In instances where positive results were found at the lowest analyzed level, samples from three, four and five feet levels were analyzed for the contaminant in question.

III. Overview of Results

The individual analyses are contained in MAECORP's Interim Report, which is attached, and consists of three individual binders.

The analyses were negative at all levels at all sample locations for arsenic, chromium, mercury, selenium, silver, all volatile organic compounds, most semi-volatile organic compounds, and corrosivity.

Results defined by the closure plan as meeting the criteria for contamination were found at some levels and some locations for barium, cadmium, some semi-volatile organic compounds, and pH.

IV. Analysis and Discussion of Specific Findings

Please note that the data in this section differ from those presented by MAECORP in Table 2 'Summary of Sample Status' of their report. MAECORP's data are the results of just the re-analysis. The following data are averages of the two analyses, which are considered to be more appropriate.

A. Barium

Positive results were recorded at the 18-24 inch level at locations IB1 and IB2, and for the duplicate sample taken at the 0-6 inch level of IB1. These findings will be evaluated separately.

1. 18-24 Inch level samples.

The criterion for contamination at the 18-24 inch level was 123 ppm. Two samples, IB1 and IB2, produced results of 149 and 156.5, respectively. While these results appear to be above the background levels, examination of the data reveals that these positive results are artifacts of the sampling process, and not true indications of contamination.

The background samples for the 18-24 inch level happened to produce uniform values, with little deviation, thus producing a very low standard deviation. This can be shown by comparison with the other levels:

level	average	standard deviation	criteria for contamination
0-6	126	38.5	242
6-12	118	27.3	200
12-18	96.2	20.7	158
18-24	**96.4**	**8.91**	**123**
30-36	62.7	32.9	161
42-48	37.7	29.6	127
54-60	50.1	61.9	236

The 18-24 inch level has a much smaller standard deviation (and resulting criterion for contamination) than would be expected from comparison with the surrounding levels. For example, the level immediately above (12-18 inch) has almost the identical average, but its standard deviation is more than double. If the positive results from the 18-24 inch level would have been obtained at any of the other higher soil levels, the results would have been negative.

2. Duplicate sample at IB1

The 0-6 inch IB1 duplicate sample produced results that exceeded the criterion for contamination, while the 'original' sample did not. The first analysis show both samples above the criterion for contamination, but upon re-analysis, the original sample dropped below the criterion, while the duplicate did not.

The actual data, in ppm, are:

	first analysis	re-analysis	average
IB1 original sample	299	217	258
IB1 duplicate sample	248	257	252
	Criterion for contamination		242

Duplicate samples are taken to confirm the validity of the sampling procedure and the sample handling protocol. The duplicate were generated in the field by splitting the soil sample for the particular level of a boring. The sample was mixed, but not homogenized before splitting.

The contractor who conducted the sampling and analysis does not consider this finding to cast any doubt upon the validity of the sampling and/or analysis. By examining the data, it can be seen that average for the 'contaminated' sample was actually lower than the average of the clean sample. Thus the duplicate sample did not actually deviate significantly from the original sample. The seemingly contradictory results are an artifact of the criteria for contamination.

B. Cadmium

The positive results, in ppm, for cadmium are displayed below by location and level, along with the respective background average and the three standard deviation criterion for contamination:

Level	Ave	+3SD	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	1.22	2.20	-	-	-	-	-	-	-	-	-	-
6-12	1.35	3.18	-	-	-	6.12	*	-	-	-	-	-
12-18	1.00	1.00	2.43	2.49	-	5.11	-	-	-	-	-	1.19
18-24	1.03	1.15	1.83	1.59	-	1.62	-	-	-	-	-	1.23
30-36	1.05	1.33	-	-	-	-	*	*	*	*	*	-
42-48	1.03	1.19	-	-	-	-	*	*	*	*	*	-
54-60	1.00	1.00	-	-	-	-	*	*	*	*	*	-

- = negative results, * = not conducted, SD = standard deviation

Significant points about the results are that no positives were obtained at levels lower than two feet, and that the positive results in OB3 are only marginally above the criterion.

C. Semi-Volatile Organic Compounds

A total of 11 different semi-volatile organic compounds (SVOCs) gave results above the criteria for contamination at various levels at four locations:

1. Naphthalene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	-	-	-	-	-	-	-	-	-
6-12	-	-	-	-	*	-	-	-	-	-
12-18	-	-	-	-	-	-	-	-	-	-
18-24	-	-	-	-	0.16	-	-	-	-	-
30-36	*	-	*	*	-	*	*	*	*	*
42-48	*	-	*	*	0.15	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

2. Benzo(ghi)perylene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	-	-	-	-	-	-	-	-	-
6-12	-	-	-	-	*	-	0.25	-	-	-
12-18	-	-	-	-	0.29	-	-	-	-	-
18-24	-	-	-	-	0.31	-	-	-	-	-
30-36	*	-	*	*	0.16	*	*	*	*	*
42-48	*	-	*	*	0.43	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

3. Anthracene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	-	-	-	-	-	-	-	-	-
6-12	-	-	-	-	*	-	-	-	-	-
12-18	-	-	-	-	0.16	-	-	-	-	-
18-24	-	-	-	-	-	-	-	-	-	-
30-36	*	-	*	*	-	*	*	*	*	*
42-48	*	-	*	*	-	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

4. Phenanthrene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	0.24	-	-	-	0.21	-	-	-	-
6-12	-	-	-	-	*	-	0.73	-	-	-
12-18	-	-	-	-	0.72	-	-	-	-	-
18-24	-	0.93	-	-	0.45	-	-	-	-	-
30-36	*	-	*	*	0.20	*	*	*	*	*
42-48	*	-	*	*	0.41	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

5. Benzo(a)pyrene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	-	-	-	-	0.18	-	-	-	-
6-12	-	-	-	-	*	-	0.43	-	-	-
12-18	-	-	-	-	0.40	-	-	-	-	-
18-24	-	0.58	-	-	0.43	-	-	-	-	-
30-36	*	-	*	*	0.15	*	*	*	*	*
42-48	*	-	*	*	0.44	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

6. Benzo(k)fluoanthene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	-	-	-	-	-	-	-	-	-
6-12	-	-	-	-	*	0.28	-	-	-	-
12-18	-	-	-	-	0.85	-	-	-	-	-
18-24	-	1.11	-	-	-	-	-	-	-	-
30-36	*	-	*	*	0.34	*	*	*	*	*
42-48	*	-	*	*	0.92	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

7. Chrysene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	0.15	-	-	-	0.19	-	-	-	-
6-12	-	-	-	-	*	-	-	-	-	-
12-18	-	-	-	-	0.44	-	-	-	-	-
18-24	-	0.50	-	-	0.42	-	-	-	-	-
30-36	*	-	*	*	0.24	*	*	*	*	*
42-48	*	-	*	*	0.46	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

8. Benzo(b)fluoanthene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	0.18	-	-	-	-	-	-	-	-
6-12	-	-	-	-	*	0.28	-	-	-	-
12-18	-	-	-	-	0.51	-	-	-	-	-
18-24	-	-	-	-	-	-	-	-	-	-
30-36	*	-	*	*	0.33	*	*	*	*	*
42-48	*	-	*	*	-	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

9. Fluoanthene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	0.39	-	-	1.05	0.52	-	-	-	-
6-12	-	-	-	-	*	0.48	1.16	-	-	-
12-18	-	-	-	-	1.28	-	-	-	-	-
18-24	-	1.97	-	-	0.96	-	-	-	-	-
30-36	*	-	*	*	0.42	*	*	*	*	*
42-48	*	-	*	*	0.84	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

10. Benzo(a)anthracene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	0.16	-	-	-	-	-	-	-	-
6-12	-	-	-	-	*	-	0.50	-	-	-
12-18	-	-	-	-	0.35	-	-	-	-	-
18-24	-	0.39	-	-	-	-	-	-	-	-
30-36	*	-	*	*	0.24	*	*	*	*	*
42-48	*	-	*	*	0.47	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

11. Pyrene, in ppm

Level	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	-	0.42	-	-	-	0.35	-	-	-	-
6-12	-	-	-	-	*	0.34	1.12	-	-	-
12-18	-	-	-	-	0.91	-	-	-	-	-
18-24	-	1.13	-	-	0.70	-	-	-	-	-
30-36	*	-	*	*	0.34	*	*	*	*	*
42-48	*	-	*	*	0.64	*	*	*	*	*
54-60	*	-	*	*	-	*	*	*	*	*

- = negative results, * = not conducted

Reviewing these data, the following points become apparent:

1. No positive results were obtained outside the building.
2. No positive results were obtained at the lowest level analyzed at any location.
3. No result was obtained over 2 ppm, and most were below 1 ppm.

Additionally, there does not appear to be any pattern of contamination. The four borings that had positive results are not all adjacent. The borings that were adjacent did not always have positive results at the same levels. Within the same location, a specific contaminant will appear at separated levels.

D. pH

The results obtained for pH that are positive according to the criteria for contamination are listed below. This information was generated despite concerns that applying standard deviation to logarithmic numbers might be meaningless.

Level	Ave	3SD	IB1	IB2	IB3	IB4	IB5	IB6	IB7	OB1	OB2	OB3
0-6	7.03	7.35	-	-	-	7.4	7.4	7.5	-	-	-	-
6-12	6.73	7.17	-	-	7.4	7.3	*	9.1	-	-	7.3	8.5
12-18	6.85	7.30	-	-	-	7.4	-	9.2	-	-	-	-
18-24	6.83	7.15	-	-	-	-	7.3	7.7	7.2	-	7.2	-

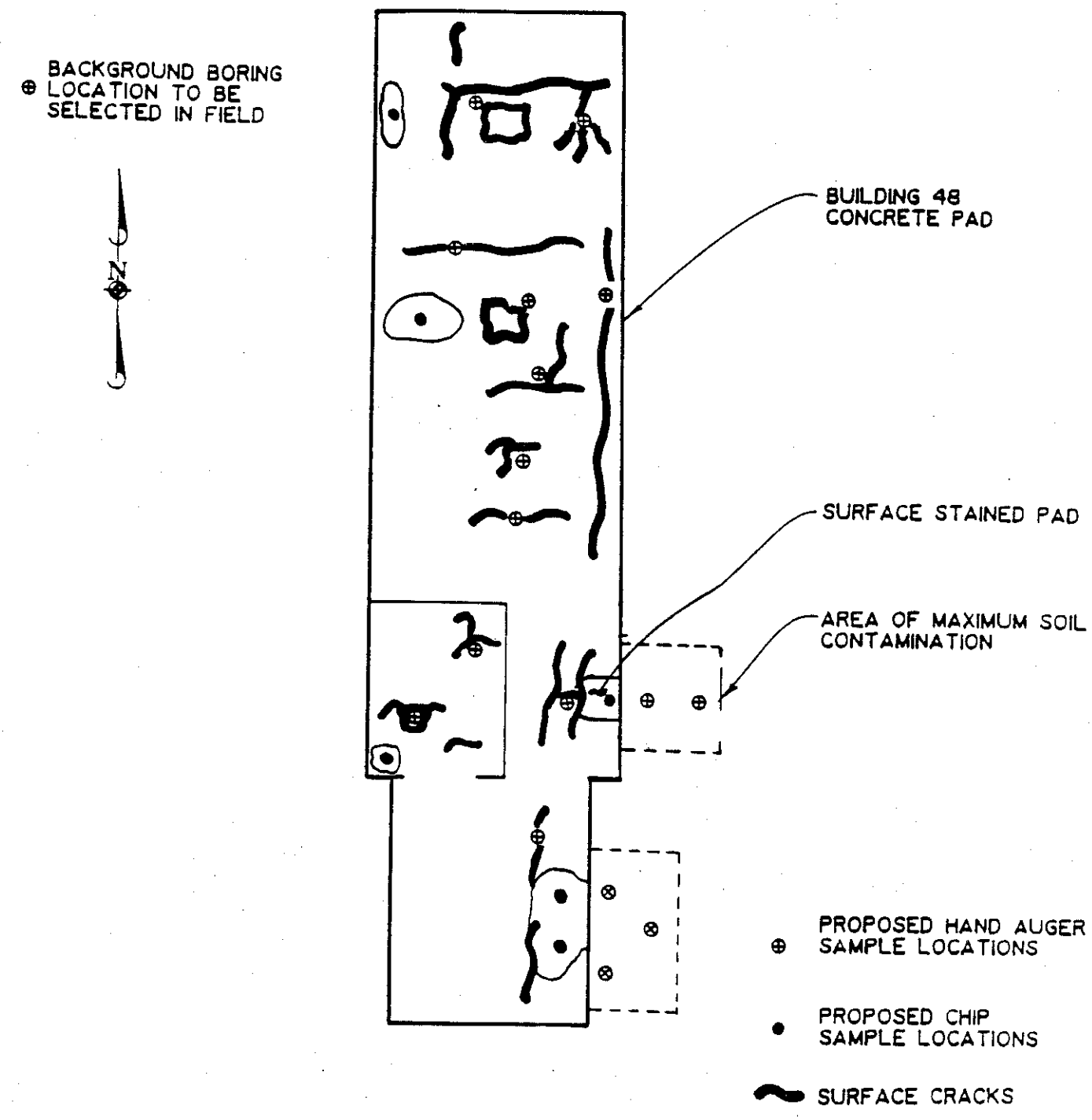
- = negative results, * = not conducted, SD = standard deviation

While positive results were obtained, reviewing this data does not indicate that any contamination has occurred. All values are within range of pH values that are considered to be neutral.

V. Conclusions

The positive results obtained for barium and pH are not considered to be valid indications that any contamination has occurred, for the reasons so stated above. No additional actions are considered to be necessary.

The positive results for cadmium and the specific SVOCs, in our opinion, are not a result of any operation that was conducted within the Building when it was a waste storage facility, and are not sufficiently high to warrant any remediation. The industrial site on which Building 48 is located has been used for heavy industrial manufacturing for 103 years. A certain amount of low level oil and metal deposition into the soil would be expected to have occurred over this time period. The levels are low, and do not show any pattern that would indicate contamination from a spill or leak.



BORING & SAMPLING PLAN
BUILDING NO. 48
BALL CORPORATION
MUNCIE, IN

PROJECT NO.	21-77055
SCALE	1" = 30'
FIGURE NO.	3

FILE

Rec'd 11/2/92
Part A

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Evan Bayh
Governor
Kathy Prosser
Commissioner

105 South Meridian Street
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

October 24 1992

Ms. Cynthia A. Deal
Environmental Engineer
Environmental Services Department
Ball Corporation
345 S. High Street
Muncie, Indiana 47305-2336

Dear Ms. Deal:

Re: Modified Site Assessment
Ball Corporation
Muncie, Indiana
IND 000810713

The Indiana Department of Environmental Management (IDEM) has received your request dated October 5, 1992 to modify your approved Site Assessment. The request was to modify the analytical method to be more specific to mineral spirits. Upon review of the request, the IDEM has approved the following modifications to the Site Assessment:

1. 3.2 Laboratory Test Methods for Soil Samples

   Soil samples will be tested for the presence of mineral spirits. Analyses shall be performed in adherence to Analytical Method 8015, as described in U.S. EPA Document SW-846, Third Edition, including the quality assurance/quality control standards, method blanks and laboratory spikes as specified.

   The Laboratory Quality Assurance Project Plan for the laboratory conducting the analytical work will be submitted to the IDEM prior to the initiation of the Site Assessment Plan.

2. 3.3 Determination of Mineral Spirits in Soil Samples

   The criteria for determining the presence of mineral spirits in soil samples shall be the Practical Quantitation Limits (PQLs) for EPA Analytical Method 8015. Any sample producing results above the PQLs shall be considered to contain mineral spirits.

If you have any questions concerning this matter, please contact Mr. Phil Perry at 317/232-3397.

Sincerely,

Karyl K. Schmidt for

Thomas E. Linson, Chief
Hazardous Waste Management Branch
Solid and Hazardous Waste Management

PRP/go

cc: Mr. Hak Cho, U.S. EPA, Region V
Mr. Steve Buckel
Ms. Pam O'Rourke

FILE

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Evan Bayh
Governor
Kathy Prosser
Commissioner

105 South Meridian Street
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

MU Dup
check should be here

September 10, 1992

Mr. Richard H. Cole Jr.
Senior Chemical Information Analyst
Ball Corporation
P.O. Box 2407
Muncie, Indiana 47307-0407

Dear Mr. Cole:

Re: Modified Site Assessment
Ball Corporation
Muncie, Indiana
IND 000810713

The site assessment plan dated March 20, 1990 and revised March 16, 1991, has been approved with the enclosed modifications.

Within thirty (30) days of receipt of this notice, Ball Corporation shall implement the site assessment plan, as required by Item 17 of the Agreed Order, Cause No. H-135 and the approved plan. Within sixty (60) days of completion of the analysis, Ball Corporation must submit a clean-up or remedial action plan to the IDEM.

If you have any questions concerning this matter, please contact Mr. Phil Perry at 317/232-3397.

Sincerely,

Thomas E. Linson, Chief
Hazardous Waste Management Branch
Solid and Hazardous Waste Management

PRP/go
cc: Mr. Hak Cho, U.S. EPA, Region V
Ms. Fayola Wright, U.S. EPA, Region V
Ms. Pam O'Rourke
Mr. Steve Buckel

Site Assessment Modifications
Ball Corporation
Muncie, Indiana
IND 000810713

1. Section 3.2, Laboratory Test Methods for Soil Samples, it is stated that, "The Laboratory Quality Assurance Project Plan for the laboratory conducting the analytical work will be submitted to the IDEM for approval once the laboratory has been selected." The Quality Assurance Project Plan (QAPP) must be submitted, subject to IDEM approval, prior to initiation of the Site Assessment Plan.

2. Section 3.3, Determination of Mineral Spirits in Soil Samples, it is stated that, "The criteria for determining the presence of mineral spirits in soil samples shall be the method detection limit for EPA Analytical Method 8240 specific to 6-12 carbon aliphatics." The minimum proposal expectation of the IDEM concerning clean closure criteria for organics are the Practical Quantitation Limits (PQLs) for the parameters of concern.

PRP/go

Ball Corporation
P.O. Box 5000, 1509 South Macedonia Avenue, Muncie, Indiana 47302 (317) 747-6100

February 26, 1986

RCRA Activities
Region V
P.O. Box A3587
Attention: ATKJG
Chicago, IL 60690

Dear Sirs:

Attached is the "Certification Regarding Potential Releases From Solid Waste Management Units" for Ball Corporation (EPA ID# IND00810713) in Muncie, Indiana. Please contact me at (317)747-6577 if there are any questions.

Sincerely,

K. S. Bickell

K. S. Bickell
Environmental Services

dw

CERTIFICATION REGARDING POTENTIAL RELEASES FROM
SOLID WASTE MANAGEMENT UNITS

FACILITY NAME: Ball Corporation

EPA I.D. NUMBER: IND 000810713

LOCATION CITY: Muncie

STATE: Indiana

1. Are there any of the following solid waste management units (existing or closed) at your facility? NOTE - DO NOT INCLUDE HAZARDOUS WASTE UNITS CURRENTLY SHOWN IN YOUR PART A APPLICATION

	YES	NO
° Landfill	X	
° Surface Impoundment		X
° Land Farm		X
° Waste Pile		X
° Incinerator		X
° Storage Tank (Above Ground)		X
° Storage Tank (Underground)		X
° Container Storage Area		X
° Injection Wells		X
° Wastewater Treatment Units		X
° Transfer Stations		X
° Waste Recycling Operations		X
° Waste Treatment, Detoxification		X
° Other _____		

2. If there are "Yes" answers to any of the items in Number 1 above, please provide a description of the wastes that were stored, treated or disposed of in each unit. In particular, please focus on whether or not the wastes would be considered as hazardous wastes or hazardous constituents under RCRA. Also include any available data on quantities or volume of wastes disposed of and the dates of disposal. Please also provide a description of each unit and include capacity, dimensions and location at facility. Provide a site plan if available.

Information regarding the landfill was reported via EPA form 8900-1 notification of hazardous waste site, submitted on 6/8/81 to USEPA Region 5, Sites Notification, Chicago, IL 60604 and is hereby incorporated by reference.

NOTE: Hazardous wastes are those identified in 40 CFR 261. Hazardous constituents are those listed in Appendix VIII of 40 CFR Part 261.

3. For the units noted in Number 1 above and also those hazardous waste units in your Part A application, please describe for each unit any data available on any prior or current releases of hazardous wastes or constituents to the environment that may have occurred in the past or may still be occurring.

   Please provide the following information

   a. Date of release
   b. Type of waste released
   c. Quantity or volume of waste released
   d. Describe nature of release (i.e., spill, overflow, ruptured pipe or tank, etc.)

None Known

4. In regard to the prior or continuing releases described in Number 3 above, please provide (for each unit) any analytical data that may be available which would describe the nature and extent of environmental contamination that exists as a result of such releases. Please focus on concentrations of hazardous wastes or constituents present in contaminated soil or groundwater.

Not Applicable

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the submittal is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (42 U.S.C. 6902 et seq. and 40 CFR 270.11(d))

K. S. Bickell,
Supervisor, Corporate Environmental Services
Typed Name and Title

K. S. Bickell
Signature

Feb. 26, 1986
Date